

## The Waning World Power: the demographic future of Russia and the other Soviet successor States

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Monographie / monograph

Zur Verfügung gestellt in Kooperation mit / provided in cooperation with:

SSG Sozialwissenschaften, USB Köln

### Empfohlene Zitierung / Suggested Citation:

Sievert, S., Sacharow, S., & Klingholz, R. (2011). *The Waning World Power: the demographic future of Russia and the other Soviet successor States*. Berlin: Berlin-Institut für Bevölkerung und Entwicklung. <https://nbn-resolving.org/urn:nbn:de:0168-ssoar-328240>

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Stephan Sievert, Sergey Zakharov, Reiner Klingholz

# The Waning World Power

The demographic future of Russia  
and the other Soviet successor states



ous renaissance +++ the north is shrinking, the south is growing +++ magnetic Moscow +++ future poles of growth +++ Russia pays "maternity capital" for each child +++ strong population growth in Central Asia +++ support for mono-cities +++ fewer and fewer conscripts +++ housing shortage in urban areas +++



Stephan Sievert, Sergey Zakharov, Reiner Klingholz

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and the other Soviet successor states

Translated by Rebecca Garron and Robert Brambeer

## Imprint

The Berlin Institute would like to thank the following organizations for supporting this research project:

Robert Bosch Stiftung  
GfK Association  
ERSTE Foundation  
Deutsche Bank AG

The Berlin Institute for Population and Development is a non-profit organization registered in Hanover ([www.berlin-institut.org](http://www.berlin-institut.org)). As a foundation, the Berlin Institute does not receive any federal institutional subsidies and relies, therefore, on project funding, donations and endowments. Donations to the Berlin Institute are tax deductible.

Account for donations: Bankhaus Hallbaum, account no. 20 28 64 07,  
IBAN: DE50250601800020286407, BIC: HALLDE2H

Original edition  
April 2011  
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Published by the Berlin Institute for Population and Development  
Schillerstrasse 59  
10627 Berlin  
Germany  
E-Mail: [info@berlin-institut.org](mailto:info@berlin-institut.org)  
[www.berlin-institut.org](http://www.berlin-institut.org)  
You can find the Berlin Institute on Facebook and Twitter (@berlin\_institut).

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Organization: Christian Kutzner  
Layout and design: Jörg Scholz, Cologne ([www.traktorimnetz.de](http://www.traktorimnetz.de))  
Printing: Gebrüder Kopp GmbH & Co. KG, Köln

ISBN: 978-3-9812473-7-4

# CONTENTS

<b>PREFACE: CLAIMS TO GLOBAL INFLUENCE AND FEAR OF DOMESTIC COLLAPSE.....</b>	<b>4</b>	<b>ASIAN RUSSIA.....</b>	<b>68</b>
<b>OVERVIEW: 20 years of transformation and no end in sight.....</b>	<b>6</b>	URAL Federal District .....	70
Population Development: <b>From demographic superpower to region in crisis .....</b>	<b>12</b>	SIBERIAN Federal District .....	75
Children and Family: <b>Plummeting birth rate during transition .....</b>	<b>16</b>	FAR EASTERN Federal District .....	81
Migration: <b>Russia's demographic reserves .....</b>	<b>20</b>	<b>THE WEST .....</b>	<b>88</b>
Health: <b>Alcohol consumption as business cycle indicator.....</b>	<b>25</b>	ESTONIA .....	90
Education: <b>Quantity instead of quality .....</b>	<b>29</b>	LATVIA .....	92
Welfare: <b>Room to grow .....</b>	<b>32</b>	LITHUANIA.....	94
Religion and Ethnicity: <b>Renaissance after 70 years of suppression.....</b>	<b>34</b>	BELARUS .....	97
Environment: <b>Sins of the past, dangers in the future .....</b>	<b>37</b>	MOLDOVA.....	101
Cities: <b>Planned life .....</b>	<b>40</b>	UKRAINE.....	104
Security: <b>Foreign policy ambitions and domestic dangers.....</b>	<b>42</b>	<b>THE SOUTH .....</b>	<b>110</b>
<b>EUROPEAN RUSSIA.....</b>	<b>44</b>	GEORGIA .....	112
CENTRAL Federal District .....	46	ARMENIA .....	114
NORTHWESTERN Federal District.....	51	AZERBAIJAN.....	117
SOUTHERN Federal District.....	57	KAZAKHSTAN.....	119
NORTH CAUCASIAN Federal District.....	60	UZBEKISTAN .....	124
VOLGA Federal District.....	63	TURKMENISTAN .....	129
		KYRGYZSTAN.....	131
		TAJIKISTAN.....	134
		<b>INDICATORS AND METHODS .....</b>	<b>138</b>
		<b>BIBLIOGRAPHY .....</b>	<b>142</b>

## Robert Bosch Stiftung

The German-Russian exchange – particularly in demographic matters – is an integral part of the work of Robert Bosch Stiftung. The present study, which has been co-financed by Robert Bosch Stiftung, shows that Russia and its neighbours are facing several challenges: these include low birth rates, ineffective health care systems, low life expectancies as well as migration flows, which lead to ethnic conflicts in many places. Some of these issues are also familiar to Germany. In the context of the German-Russian exchange, it is therefore important to learn from one another, to support scientific dialogue and to cooperate in tackling the problems caused by demographic change.

# CLAIMS TO GLOBAL INFLUENCE AND FEAR OF DOMESTIC COLLAPSE

## Where are the world's biggest country and its neighbours heading?

Russia and the other Soviet successor states have a long, painful history of demographic crisis: hunger, war, persecution and genocide have repeatedly decimated their populations and driven the people to places no human being would actually want to live in. But the demographic changes now facing the region differ from previous experiences.

On the one hand, the large post-war generation is reaching pension age, although in Russia – as in Ukraine and Belarus – about half of all men die before they are 65, anyway. Nowhere in Europe do people die as early as they do in Russia. On the other hand, a generation of young people, born in the immediate post-Soviet period with very few children, is approaching working age. When they reach childbearing age and have as few children as people currently do, the demographic downturn will accelerate further. Russia's far north and far east, in particular, are already undergoing a veritable

population implosion since, in addition to low fertility, people are emigrating in droves. By the middle of the century, the number of Russia's inhabitants could sink by 25 million. The working-age population will suffer especially heavy losses, shrinking by 15 million or about 20 percent by 2030.

The country, however, will have to master what may be one of the greatest transformations: turning an economy based on natural resources, which president Dmitry Medvedev once called “primitive”, to a service and knowledge-based economy with a broad foundation. Moscow's leadership knows very well that selling oil, gas and metals will not pave the way to sustainable development; that it is highly dependent

upon the world economy; that it promotes monopolies and corruption and forces state intervention in the economy; that it divides society into rich oligarchs and an underclass of have-nots. But the former empire of Czars and five-year planners is having a hard time dispensing with old ideologies and establishing a future based on its citizens' own capabilities, meaning a modern society with a creative, self-confident middle class which thinks and acts freely. Despite all efforts to promote innovation from above, with technology parks and special economic zones, there is little evidence of a new, open and economically liberal Russia.

Necessary efforts towards quality, democracy, health and education should not only focus on human talent; they should also openly address immigration. Russia needs immigrants, like all strongly shrinking and ageing nations such as Japan and Germany,

## Demographic descent

In 1960, the Russian Soviet Socialist Republic would have been the world's fourth most populous state. Despite the fact that today's Russia continued to grow for most of the 20<sup>th</sup> century, by 2010, it only ranked 9<sup>th</sup>. The demographic shrinkage, which will cost Russia about 25 million people until 2050 – the combined size of the country's ten largest cities –, the country will no longer appear among the top ten by the middle of the century.

1960	
China	646
India	448
Soviet Union	214
USA	186
(Russian SSR)	120
Japan	93
Indonesia	93
Brazil	73
Germany	73
Bangladesh	54
United Kingdom	52
Italy	50
Pakistan	49
France	46
Nigeria	45

2010	
China	1.354
India	1.214
USA	318
Indonesia	233
Brazil	195
Pakistan	185
Bangladesh	164
Nigeria	158
Russia	140
Japan	127
Mexico	111
Philippines	94
Vietnam	89
Ethiopia	85
Egypt	84

2050	
India	1.614
China	1.417
USA	404
Pakistan	335
Nigeria	289
Indonesia	288
Bangladesh	223
Brazil	219
Ethiopia	174
Congo	148
Philippines	146
Egypt	130
Mexico	129
Russia	116
Vietnam	112

**Russia and the world's most populous countries, inhabitants in millions, 1960, 2010 and 2050**  
(Source: United Nations, World Population Prospects: The 2008 Revision Population Database, New York)

in order to survive in a globalized world. Enough can be found in the Caucasus, Central Asia and all the predominantly Muslim Soviet successor states. But Russia's population is by no means prepared to productively exploit these Soviet-era bonds. Fear of the foreign goes hand in hand with a return to nationalist

sympathies. In Moscow, especially, where about one-fifth of the population is Muslim, suspicion is increasingly turning violent.

If Russia wants to maintain its role as a world power, it has to be willing to modernize the state. Demographic changes are creating enormous pressure to implement reforms. Young people, few though they are, need sound educations, jobs, functioning health care systems and, above all, individual freedom so that they can contribute to their

countries. The demographic crisis is also a great opportunity for renewal.

Berlin, March 2011

Reiner Klingholz  
Director  
Berlin Institute for Population  
and Development

# OVERVIEW

## 20 years of transformation and no end in sight

It has been about 20 years since the failed putsch of August 1991 sealed the Soviet Union's fate. At that time, a group of conservative functionaries tried in vain to disempower president Mikhail Gorbachev and turn back the clock. It was no longer possible, however, to stop a superpower from falling apart into 15 countries of the most various sizes and levels of development.

Economic allies became competitors practically overnight when the Soviet system of regional division of labour collapsed: while the Central Asian countries had been responsible for the production of hydropower and cotton, Ukraine for the supply of numerous finished products and Moldova for food, the countries now had to stand on their own feet and seek markets for their products. The competition for capital, people and technology flared up even within the new countries. Where economic and settlement structures were once subordinated to security policy issues, they now primarily responded to market incentives. In many places, these made nonsense of established structures: numerous industrial settlements collapsed under the high costs of production, centres of the defence industry became obsolete and rural areas emptied due to emigration.

Between the new freedoms and the unfamiliar supply of consumer goods on the one hand and the reality of million-fold poverty and unemployment on the other, an enormous gap emerged. This did not only have a dire effect on psychological health: drug and

alcohol abuse destroyed many people physically. Aids became a problem and tuberculosis enjoyed a renaissance. In Russia, life expectancy for men was lower at 57 years than it had been since World War II. Moreover, empty public coffers and extreme inflation rates following price deregulation tore holes in the social safety net.

Those who barely had enough to ensure their own survival could not afford to have children. Within a decade, the average number of children per woman in Russia sank from over two to 1.2. There were similar developments in many other Soviet successor states as well as in the entire ex-Soviet sphere of influence, in East Germany and in most of the Central and Eastern European countries. Starting in the mid-1990s, women increasingly postponed childbearing in order to pursue their career goals first and thus reinforced the downward trend in fertility rates.

In regions where more people die than are born, demographic stability depends upon immigration. The population shrinks and ages especially fast in those places to which no one moves. Ageing in turn makes the social safety net expensive, while the infrastructure in rural areas becomes more and more costly for the remaining and shrinking population. The population number is not, however, the only decisive factor in regional sustainability; the socio-economic characteristics of inhabitants are also important: in order to secure long-term prosperity and well-being, citizens' education levels play an ever-greater role in post-industrial societies. Attaining peaceful relations in the face of ethnic and religious differences is another major challenge facing modern societies.

This study shows a world region which is slowly leaving behind the chaos of the 1990s and, in part, achieving high rates of economic growth. This often reinforces existing regional inequality, however. It also shows a region still marked by mutual dependencies even 20 years after its fragmentation and, at the same time, slowly opening up to the rest of the world. It shows a region characterized by a demographic process of shrinking in the north and strong population growth in the south; facing a dwindling labour force on the one hand and migration pressure on the other. Balancing these is often more complicated than it may appear in theory.

A cluster analysis – a classification of regions in the post-Soviet space into groups – based on demographic characteristics, makes it possible to trace the most important trends and to get a glimpse of the future. A second cluster analysis based on economic features provides orientation when trying to understand the regions' levels of development. The results of this cluster analysis are described separately on page 11. Comprehensive information about methods and data can be found in the chapter "Indicators and Methods" on page 138.

# Demography



## Cluster 1 – Where immigrants go

Thanks to immigration, a small group of regions managed in the past to maintain or even increase their populations despite low numbers of children. These include the capital cities of Moscow, Kiev and Minsk as well as the Baltic Sea metropolis of St. Petersburg and the Ukrainian Black Sea harbour of Sevastopol. Cities such as Yekaterinburg, Nizhny Novgorod and Novosibirsk are undergoing similar

developments, but not the regions to which they belong, where the rural areas, villages and small towns provide fewer and fewer job prospects for the young and educated.

In addition to these administratively independent cities, group 1 contains exclusively Russian regions: Moscow and Leningrad Oblasts, the popular Black Sea region of Krasnodar, the Republic of Tatarstan on the Volga and the small region of Belgorod on the Ukrainian border. They have become immigrant destinations due to their economic strength and regional features such as an attractive geographical location (Krasnodar) or active migration policies (Belgorod). With the exception of greater St. Petersburg, where women have extremely few children even by Russian

standards, this group’s population losses by 2030 will be minimal. A few regions may even experience slight growth.

Natural resource production, often quoted as Russia’s only engine of growth, only plays a larger role in Tatarstan and Belgorod. The capital cities have instead become centres of modern services such as banking and insurance, while Krasnodar Krai owes its popularity to agriculture, trade and tourism. With the ever-slower expansion of natural resource production, which accounts for the bulk of Russian GDP but only provides 1.5 percent of all jobs, these regions are well-equipped for the future.

Nonetheless, these alleged “winner regions” are facing enormous challenges: young and old, natives and immigrants, rich and poor are but a few of the opposing forces which need to be reconciled. 18.7 percent of inhabitants are 60 or older. While it is true that immigrants lower the average age and make sure that the labour force shrinks more slowly here than elsewhere, migrants increasingly face opposition – sometimes violent – from the native population. Restrictive migration policies introduced at the beginning of the century contributed to this, forcing many immigrants into illegality. Most recently, fear of terrorism has also been feeding resentment towards immigrants, who often hail from Muslim countries or the crisis-ridden Russian North Caucasus. Allaying these fears is one of politics’ and society’s most difficult tasks in the near future. Other problems include economic inequality, which has become extreme in Moscow in particular, and limited housing in the major cities.

### Cluster 2 – Where people live long

The regions in group 2 are also facing generally low population losses in the next two decades, if for entirely other reasons than the economically strong areas in group 1. In contrast to the latter, almost all of the members of this group are losing inhabitants due to emigration. Women, however, have an average of 1.64 children in the course of their lives, which is about 0.3 more than in group 1. One reason for this is that group 2 includes more rural areas in which traditional lifestyles are still the norm. This is true for both regions in the North and South Caucasus as well as for the western regions of Ukraine and Belarus.

The really distinguishing feature of this group is, however, the high life expectancy of 72.2 years. This can be attributed to climatic conditions as well as the significance of religion and the ethnic make-up of the population. Both in the North Caucasus as well as in the western regions of Ukraine, there are fewer Russians than the nationwide average. Avoidable alcohol-related deaths occur less often. Low industrial density, meaning less environmental pollution, contributes to longer lives as does the low degree of urbanization, which limits problems like drug abuse and HIV.\*

Many of the regions in group 2 are direct neighbours of the EU. The three Baltic states have even been EU members since 2004. From an economic perspective, they stand out from the rest of group since they are among the wealthiest regions of the former Soviet Union. Yet membership in the EU has led to westward migration losses.

Despite demographic stability, the regions in group 2 do not count among the post-Soviet hopefuls – with the exception of the Baltic states. In the North Caucasus, political instability, corruption and a lack of legal security block sustainable development as much as the population’s low level of education. Only when this changes will foreign investors find their way back here, since the region will hardly manage on its own to catch up to the rest of the country. There is no money to invest – up to 80 percent of many of these regions’ budgets come from federal subsidies – and innovation is extremely weak. This is also true for western Ukraine and large parts of Belarus.

\* Some researchers doubt the credibility of life expectancy data from the North Caucasus. In particular the republics of Dagestan and Ingushetia seem too positively assessed. These economically underdeveloped regions would have been assigned to group 5, if life expectancy had been somewhat lower.



### **Cluster 3 – Where the population is ageing and shrinking due to low fertility**

There is a low fertility belt, in which the ageing of society has reached an advanced stage, extending from Kaliningrad through vast parts of Belarus and Ukraine, Central and Northwest Russia and past the Urals to the Siberian region of Krasnoyarsk. As a result, in group 3 a fifth of the population is 60 or older; in the north Ukrainian region of Chernihiv, the figure is as much as 25 percent. On average, these regions will probably shrink by double-digit percentages until 2030. Containing 66 regions, group 3 is clearly the largest of all.

Industrial regions of average economic strength constitute a large portion of the group. The GDP spectrum reaches from an annual 14,700 international dollars per capita in Central Russian Lipetsk Oblast to 3,800 international dollars in the Zakarpattia Oblast in Ukraine's outermost southwest. In many places, immigration and emigration balance each other out. Only a few areas have notable migration surpluses. These include the Central Russian oblasts of Kaluga and Yaroslavl, Samara and Astrakhan Oblasts on the Volga, Russia's western outpost of Kaliningrad, the Ukrainian Black Sea harbour of Odessa as well as the scientific centres of Novosibirsk and Tomsk.

When Russia's leadership talks about modernizing the economy through innovation, it has many of this group's regions in mind. To a certain extent, they constitute the country's old industrial core. The crisis in the mechanical engineering sector had, in some areas, disastrous consequences. Numerous regions are trying to counter economic stagnation with increased investment in research and development. In only very few, however, has this effort resulted in an increasing number of patent applications, a common indicator of innovation strength. Among the happy exceptions are the Siberian oblasts of Novosibirsk and Tomsk, Kursk and Voronezh Oblasts, and Ulyanovsk Oblast in the Volga Federal District. By Ukrainian standards, Kharkiv and Dnipropetrovsk Oblasts have high innovation rates, but compared to Russia, they are modest.

A fundamental problem in the Russian research landscape is industry's low demand for innovation. During the Soviet era, the state did, indeed, invest extensively in science; but a majority of the expenditures were made in the "military-industrial complex". These expenditures were significantly curtailed when the Cold War ended but a market for civil innovation did not emerge in its place. Many firms do not have money left for research because they have to invest large sums into the modernization of outdated production plants. This is why Russia's public coffers fund about 70 percent of research and development and only about 30 percent is funded privately. In Germany, the USA and Japan, the ratio is reversed.

In recent years, the Russian state has generously invested in the construction of technology parks and special economic zones. Their success will depend on the number of enterprises which ultimately settle there, for despite lower expenditures,

the private sector in Russia is much more successful than the state when it comes to patent applications and license agreements.

The construction of innovation centres cannot solve all problems at once anyway. Regional differences are too big for the Russian government to bridge the gap in wealth within a short period. Taking the advice of many experts, the Kremlin decided in the mid-2000s to direct investments primarily to regions worth subsidizing; for example, to places where a city can become an engine of growth or where tourist potential can be exploited, and to use tax revenues to support other regions.

### **Cluster 4 – Where people leave the peripheries**

Relatively few potential engines of growth can be found in Russia's far north and east. These regions belong to group 4, which is primarily characterized by massive out-migration. In addition to peripheral Russian regions, the northern parts of Kazakhstan and Moldova belong to this group. Next to emigration, these regions are marked by low life expectancies, slightly above-average numbers of children and, consequently, young population structures.

The group of emigration regions clearly shows that uniform settlement of the Russian territory cannot be realized under market conditions. During the Soviet era, people could be attracted to far-off regions by wage top-ups and generous holiday provisions. Since the demise of the planned economy, however, there are few reasons to move from major centres to distant areas, where

temperatures remain below zero most of the year. Many factories are defunct due to enormous production costs. Chukotka Autonomous Okrug has lost more than two-thirds of its inhabitants since the last Soviet census in 1989 and Magadan Oblast has lost over half. On the island of Sakhalin as well as in the regions of Kamchatka and Murmansk, losses constitute about a third of all inhabitants. This trend will continue with losses which will most likely compare to those in group 3. In contrast to the past, these will be based primarily on mortality surpluses since many young people eager to leave have already done so.

As almost everywhere else in Russia, marked migration flows from rural to urban areas can be observed. The elderly and the socially disadvantaged remain behind in the villages, where jobs are scarce and medical care is generally inadequate.

A future beyond the exploitation of valuable resources like gold, diamonds, crude oil and natural gas seems unrealistic in many places, particularly in the far north. This is not the case in the south, on the border to China. Yet in the regions of Amur, Khabarovsk and Primorye, high transportation costs also impede the economy. Instead, economic exchange with China, Japan and Korea is growing more significant, something of which many Russians are sceptical. They are afraid that the emerging world power in the south will take over the extremely sparsely populated eastern parts of the country.

### Cluster 5 – Where lots of children ensure population growth

The majority of regions in group 5 also have to fight emigration. These regions will by no means empty, however, since women have an average of 2.78 children – as many as in North Africa. This is significantly more than required for stable population development. The high numbers of children lead to an extremely young population structure and, in some places, high rates of growth, clearly distinguishing these regions from all other clusters.

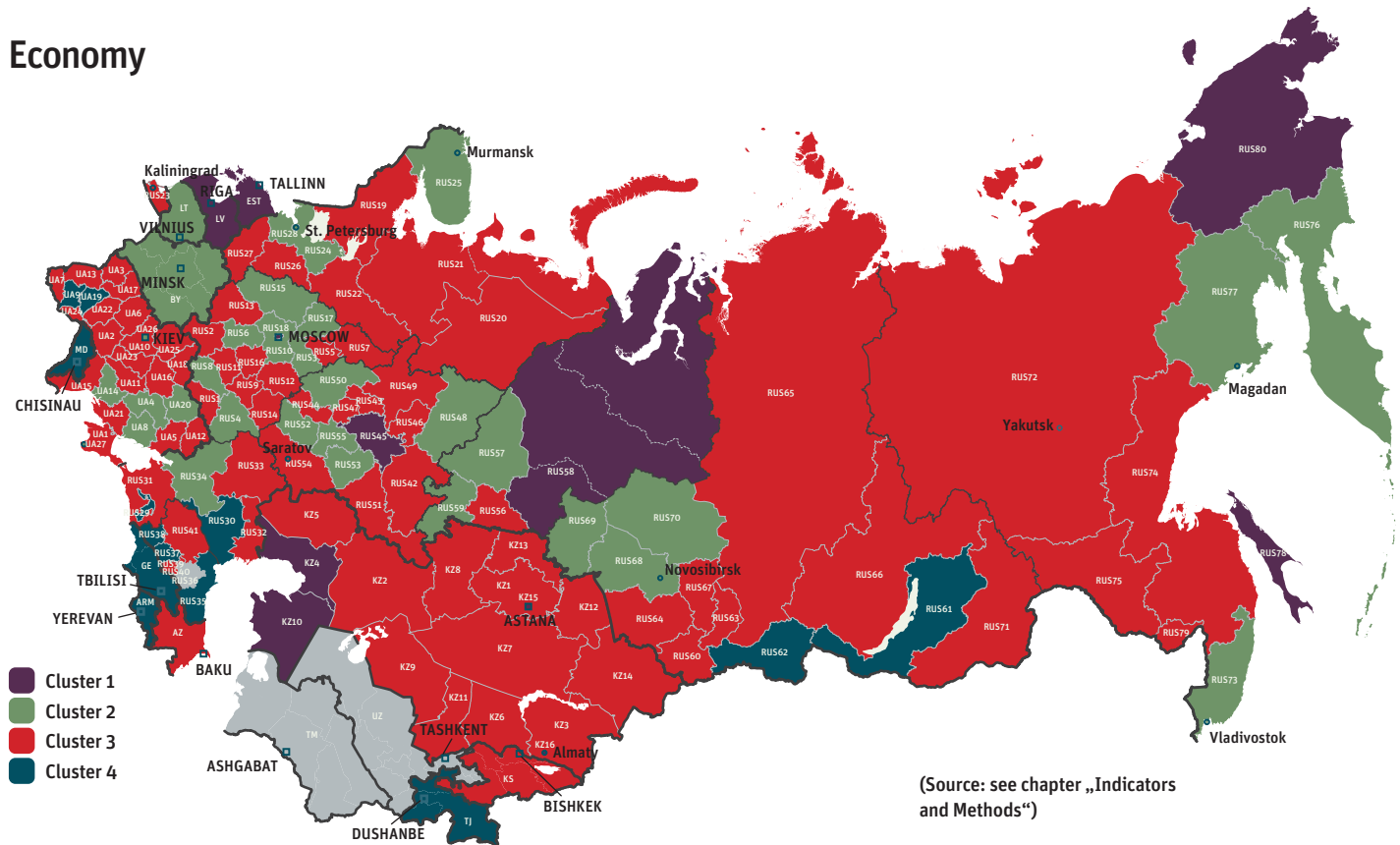
The main reason for the high numbers of children is the low level of development in these regions. In much of Central Asia and in the Russian republics of Chechnya, Tuva and Altai, people generate but 1,000 to 5,000 international dollars a year. The average in the post-Soviet space is about 9,500. Social safety nets have barely been created, which is why families continue to assume the responsibility for care. Yet the children have few local job prospects, which is why young people are leaving in droves. The most popular destination is Moscow, whence they send a major portion of their wages back to the homeland in order to support their families.

Strong population development creates both opportunities and risks. In many places, the numbers of children per woman has fallen markedly in recent years, a trend which will probably continue. In proportion to the working-age population, the number of children will thus decrease while, at the same time, there are still comparatively few pensioners. The “demographic dividend” constituted by a growing working-age population once helped other countries, like the “Asian tigers”, to develop quickly. In order to make use of this dividend, however, enormous investments in jobs are required. Whether this will be possible in Central Asia

or the Caucasus remains doubtful due to political tension in many places. The blessing could thus fast become a curse: if economic prospects for young people do not improve, the latter will continue to emigrate or seek their fortunes in informal sectors. The drug trade, for example, is already flourishing in Central Asia.

The oblasts of Aktobe and Atyrau in the western part of Kazakhstan, which also belong to group 5, do not fit into the picture. Labour migrants are attracted by crude oil production as they are in Tyumen Oblast in Western Siberia, which belongs to this group as well. Kazakhstan’s economic upswing has also led to massive immigration in the independent cities of Astana and Almaty. Like the oil-producing oblast of Mangystau, they are excluded from the analysis (see chapter “Indicators and Methods”). They do, however, combine young population structures and high numbers of children, as in group 5, with extremely high rates of immigration and economic strength, which even exceed most of group 1 regions.

# Economy



## The growth engines

The regions of cluster 1 of the economic analysis unite extraordinary economic strength and above-average employment rates. The cluster includes cities such as Moscow and Astana as well as resource-producing regions such as Tyumen and Sakhalin Oblasts in Russia and Atyrau and Mangystau Oblasts in Kazakhstan. The EU member states of Estonia and Latvia also belong to this group.

regions in Russia, Ukraine and Belarus; frequently, ones with large cities such as Yekaterinburg in Sverdlovsk Oblast. The cluster also includes some Siberian regions such as Novosibirsk and Tomsk. Investment in research and development is not a sufficient condition of future prosperity but it is an important prerequisite – especially in regions without large deposits of natural resources.

## The laggards

Cluster 4 clearly comes in last, both in terms of GDP and employment. It includes much of the Caucasus, a few underdeveloped regions of Siberia, two regions of western Ukraine as well as Tajikistan. The shadow economy plays a large role in this cluster since legal labour markets are barely developed in many places. The risk of social unrest is increasing in those places where many children are born, as can already be observed in the North Caucasus.

## The reformers

Cluster 2 contains regions which, measured by GDP and employment, are slightly above-average but are characterized primarily by extensive investment in research and development. These are, above all, European

## The large mass

Cluster 3 is by far the largest group and, to a certain extent, it constitutes the “average scenario”. The regions in this cluster have neither high GDPs nor massive investments in promising sectors of the economy. They also have average employment rates. Many regions lack the conditions to attract immigrants in the future.

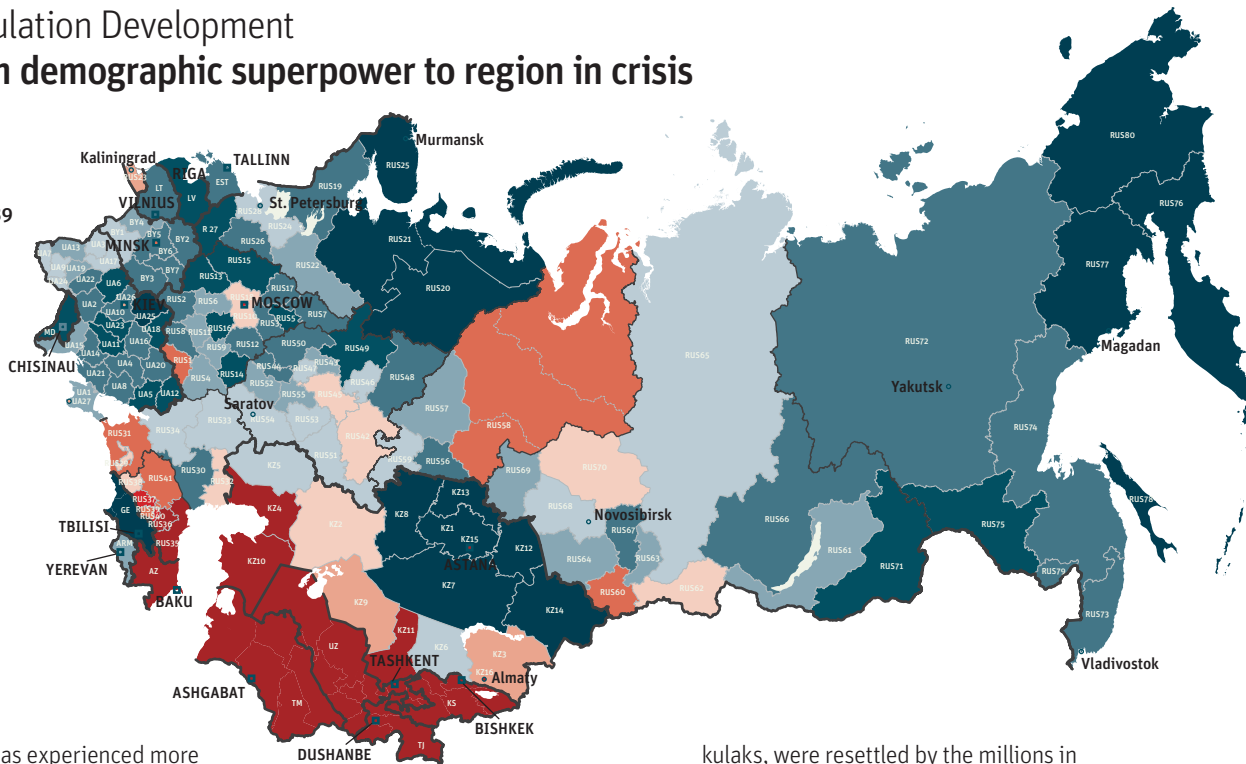
# 1

## Population Development From demographic superpower to region in crisis

Population change from 1989  
to 2010 in percentages



(Source: United Nations,  
National Statistical Offices)



The Soviet population has experienced more than its share of hardship and extensive demographic losses in its 70-year history. The massive starvation of the 1930s and the Second World War at the beginning of the following decade claimed up to 40 million victims.<sup>8</sup> Stalin's forced resettlement of farmers, the deportation of entire peoples and forced labour in Siberia's prison camps and the Far East claimed many millions more and extensively altered regional settlement.

### Reconstruction after the war

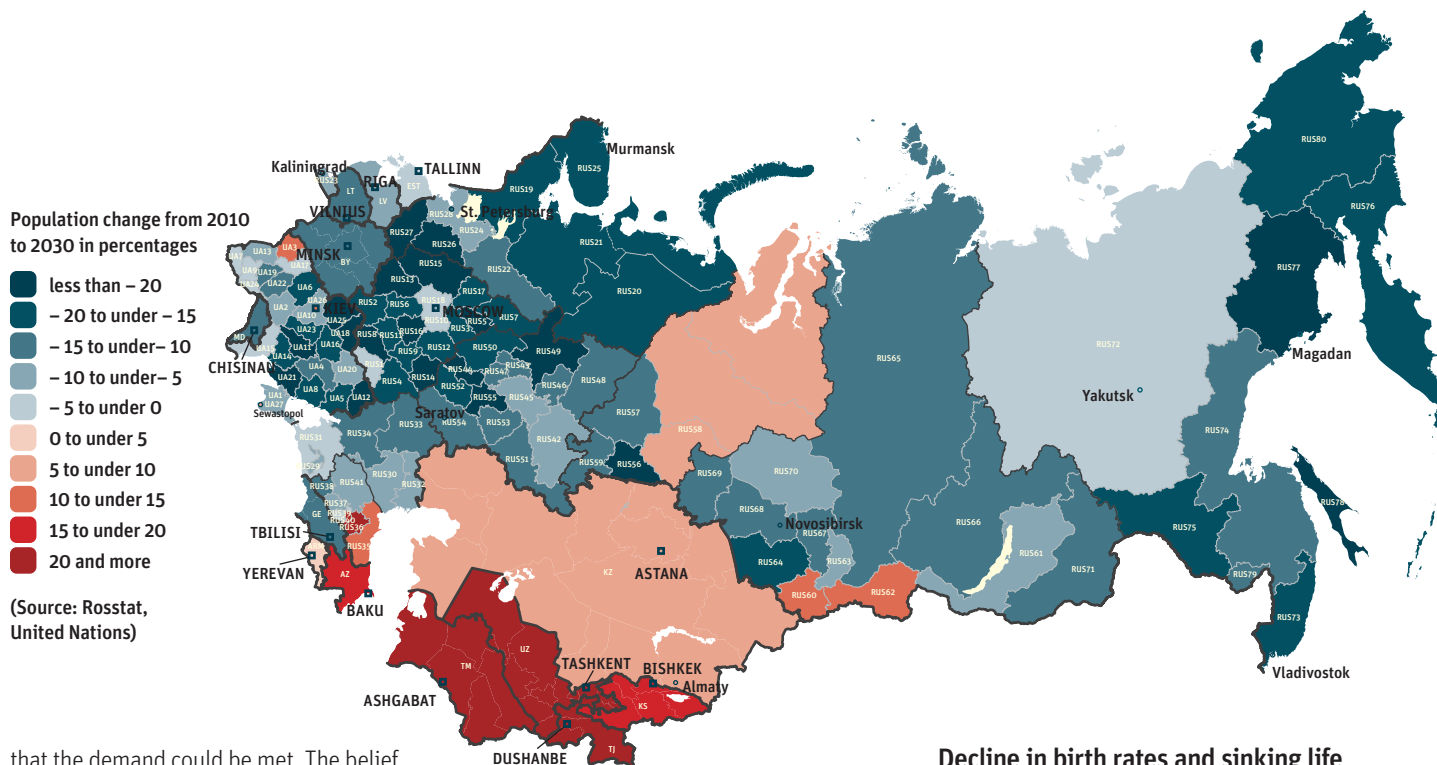
At the end of the Second World War, the western part of the Soviet Union lay in ruins. Hardest hit were today's Northwestern, Central and Southern Federal Districts as well as Ukraine and Belarus. In addition to those who had died, millions had lost their homes and livelihoods.

Already during the war, the economic and demographic centre of the country had shifted to the east. Important industries, such as the defence industry, had been evacuated in the early stages to Chelyabinsk and Sverdlovsk (today's Yekaterinburg) behind the Urals. Today's Siberian Federal District as well as Kazakhstan and Kyrgyzstan also received development aid in this way. After the war, the Asian part of the country's significance continued to grow. Siberia and the Far East were the most quickly-growing regions in the Soviet Union, even if the settlement of these inhospitable stretches of land was by no means voluntary.

In order to exploit Siberia's rich natural resources, the Gulag – or the Chief Administration of Corrective Labour Camps and Colonies – had already been sending prisoners eastwards as forced labourers at the end of the 1920s. Rich farmers, who resisted collectivization, so-called

kulaks, were resettled by the millions in barely-inhabited areas. At the beginning of the Second World War, the government extensively deported Germans to Kazakhstan in order to prevent them from joining the approaching Wehrmacht, the German armed forces. In the final years of the war, diverse peoples from the Caucasus and the Crimea were sent to Central Asia and Siberia: members of the Karachay people, the Kalmyk people, Chechens, Ingush, Balkars, Crimean Tatars, Greeks and others were accused of deserting or even collaborating with the occupation. After the war had ended, prisoners constituted a major portion of the labour gangs.

In the 1950s, the Soviet authorities invested enormous sums into the reconstruction of industry in all areas of the country. Heavy industry, the backbone of Soviet production, grew rapidly and required a growing number of workers. Stable birth surpluses ensured



that the demand could be met. The belief that economic and population growth are mutually stimulating took firm root during the first quarter century following the war's end.

Throughout the reconstruction of industry, which had long broken the dominance of agriculture in the Czarist era, an ever-larger portion of the Soviet population resettled in the cities, where, in the 1960s, more than half of the population lived for the first time. Moscow had over six million inhabitants, making it one of the world's largest cities; St. Petersburg had about half that many. That the level of urbanization in the Soviet Union was still significantly lower than that in the West was due to the fact that the authorities limited legal access to almost all major centres. On the one hand, they wanted to be able to better plan the economy and to prevent social problems such as poverty and

crime. On the other hand, particularly cities, which were home to the defence industry, were virtually barricaded during the Cold War.

From 1950 to 1970, the population of the Soviet Union grew from 178 million to over 240 million people; only China and India had more inhabitants. Over half of the Soviet population lived in today's Russia, another one-fifth in Ukraine. Still, it was the Central Asian Soviet republics as well as Armenia and Azerbaijan that experienced the most rapid growth in the 1960s. In contrast to Russia's urban centres, these areas maintained their traditionally large families – and, to a certain extent, still do. Between 1959 and 1970, the populations of the southern Soviet republics grew an average of 40 percent while the rest of the country had growth rates of between five and 20 percent.<sup>9</sup> Compared to Western Europe, however, even these numbers were extremely high.<sup>10</sup>

## Decline in birth rates and sinking life expectancy

In the 1960s, however, there were signs of something which would characterize the following decade: the number of births declined and population growth slowed down. In almost all of the urbanized European Soviet republics, the total fertility rate dropped to fewer than two children per woman by the end of the 1970s.<sup>11</sup> It was only the constant influx of young immigrants – which should actually not have taken place under the propiska system\* – which ensured population growth in the European part of

\* During the Soviet era, every citizen had a stamp in his or her passport noting a permanent residence and, consequently, a permanent workplace – the so-called propiska. Moving was extremely difficult. The only people who gained access to large cities such as Moscow were those who exchanged places of residence with other citizens, had relatives in the city or were desperately needed by local companies. Many people evaded the regulations, however, by entering sham marriages, using bribery or risking illegality.

the country. Planners continued to direct their attention to the eastern parts of the country, to which they conducted people on a massive scale following the oil and gas discoveries in Western Siberia.

The first doubts about the country's demographic future appeared in the early 1970s. Granted, only few spoke about population decline at the time; but it was clear that decreasing numbers of children in an economic system which relied on a growing number of labourers would lead to crisis.

Another difficulty was that life expectancy in the 1960s suddenly began to sink. Both infant mortality and deaths among people of working-age contributed to this development.<sup>12</sup> It was only in the 1980s that Mikhail Gorbachev addressed the problem of high mortality and disability rates, which were due primarily to excessive tobacco and alcohol consumption. Among other things, Gorbachev imposed restrictions on vodka production and sales and managed to add two years to average life expectancy, which had been lost during the 1970s. Yet the success of the anti-alcohol campaign did not last long. After the restrictions were lifted, people began to drink more – and to die earlier.

## Uncertainty and fewer children

The last Soviet census in 1989 counted 285.7 million people nationwide.<sup>13</sup> A decade after the demise of the Soviet Union, there were a million more people living on former Soviet territory, but in nine of the 15 successor states, the population had decreased; in Ukraine, in fact, by several million.

As a consequence of economic uncertainty engendered by the transition to a market economy, the average number of children per woman in Russia fell within one decade from over 2.0 to under 1.2. The Soviet Union's fall equally drastically affected life expectancy, which fell from 68.9 to 63.9 years between 1991 and 1994 alone. A disproportionate number of men were affected by this, as they sought to solve the problems of transition with vodka. By the middle of the 1990s, they had a life expectancy of a mere 57.4 years.<sup>14</sup>

In 1992, more people died in Russia than were born for the first time since World War II. Annually, the country began to lose an average of 800,000 inhabitants due to rapidly increasing mortality surpluses. Countering this development, however, was the yearly return of hundreds of thousands of ethnic Russians who wanted to come back to the country of their ancestors following the fragmentation of the Soviet Union. The returnees were inspired by a lack of prospects, violent conflicts and germinating xenophobia in the Soviet Union's successor states. It was only thanks to them that Russia was able to avoid a population decline of several million people in the 1990s.

Meanwhile, within Russia regional disparities widened. Especially the Asian parts of the country struggled with extreme out-migration and low fertility. Following the discontinuation of state wage and holiday subsidies in cold Siberia, only a paltry few Russians could be found who wanted to work in the factories and mines east of the Urals. Gradually, the country's north-eastern regions emptied and have by now lost over

half of their populations. It is particularly the rural areas which have experienced a true exodus: whoever had no opportunity to go west settled, at the very least, in the local region's capital.

For many regions, the ability to attract migrants is going to be a matter of existence in the future, since only a few areas in Russia, Belarus, Ukraine and the Baltic states will be able to achieve demographic stability on their own. Even if women in these countries were to have more children in the foreseeable future – and the most recent figures suggest they will – they will hardly exceed the 2.1 children necessary for stable population numbers. Furthermore, the next generation of parents has already thinned out significantly due to the dearth of births in the last 20 years.

## Ageing and growing regional differences

Due to low numbers of children, as well as possibly increasing life expectancies in the future, the share of older people in the population will grow significantly. Currently, this figure is relatively low compared to Western Europe, even in the “oldest” of the Soviet successor states, since the two-child family only became the norm later and life expectancy remains low.

Of Russia's 142 million inhabitants, about one-fifth was of pension age in 2009. By 2030, this share could increase to about 30 percent. Since the large cohorts of the 1950s and 1960s will reach pension age in the upcoming years, while comparatively few adolescents reach employment age, Russia's working-age population will most likely shrink by about a million people annually in the next ten years.<sup>15</sup> The available labour



ressources will thus have to be used as well as possible. In particular, the country has to fight the high rates of disability, which are due to unhealthy lifestyles.

Both the economy and state coffers will suffer due to the losses of potential taxpayers. More elderly people does not only mean greater burden on a pension system which is already chronically in debt; it also means that the need for geriatric care will explode. Paradoxically, the greater the recovery in numbers of children per woman, the graver the cost increase in the next ten to 15 years, since the younger generations will create medical care and education costs before they can contribute to the country's wealth. The Russian government has already introduced initial reforms for the largest social sector, the pension system, by adding a fully-funded component to the traditional pay-as-you-go system. And the government could soon increase the comparatively low retirement age of 55 years for women and 60 years for men to prevent a decrease in pension levels and related old-age poverty.

The consequences of demographic ageing will affect all Soviet successor states sooner or later, from the relatively old societies in the Baltic states, Belarus and Ukraine to the very young nations of Central Asia. For even in the republics of Uzbekistan, Kyrgyzstan and Tajikistan, which have a wealth of children, fertility rates have sunk in the last few years, a trend which will continue in the future. In these countries, a public infrastructure of geriatric care needs to be developed since such care has so far been in the hands of the family. This tradition could change, however, in the wake of economic development and the modernization of society so that the demand for public institutions will increase.

In the next 20 years, demographic weights in the territory of the former Soviet Union will shift. This will burden primarily the Slavic republics in the north. In contrast, the

societies of the Central Asian states as well as of Armenia and Azerbaijan will continue to grow due to younger populations and high rates of children, although there are also regional differences here. For example, Armenia will grow only minimally from today's 3.1 million to 3.2 million inhabitants by 2030 – and will even shrink subsequently – while Tajikistan will grow by more than 35 percent to ten million inhabitants by 2030.<sup>16</sup> Taken together, the growth countries already mentioned will constitute just about half of the population in the territory of the former Soviet Union by 2030; they currently constitute but one-fourth.

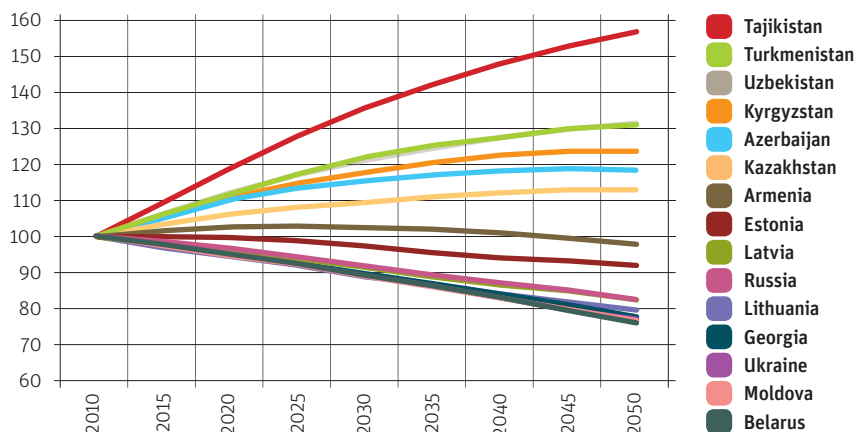
In the past 50 years, Russia has lost its status as a demographic superpower. While the Soviet Union, in terms of inhabitants, was the world's third-largest country in 1960, Russia, the largest Soviet successor state, now ranks ninth, behind countries such as Pakistan, Bangladesh and Nigeria. By 2050, Russia

may well have fallen to 14<sup>th</sup> place. Among the five countries which can expect the largest population losses in absolute numbers until 2050, there will be two Soviet successor states: Russia and Ukraine. Japan will top the list.<sup>17</sup>

These countries thus fit the picture of a demographically divided world: while populations in a low fertility belt stretching around the globe from Portugal in the West, through Russia and to Japan, are hardly growing, stagnate or shrink, the rest of the world can expect large growth. Between 2010 and 2050, Asia can expect to gain 20 percent of its current population or 1.27 billion inhabitants; both Americas should gain 29 percent or 271 million inhabitants. Africa is even facing the doubling of its inhabitants, from today's one to two billion people. Even the small African countries of Uganda and Malawi will then have – taken together – more citizens than Russia.<sup>18</sup>

## Growth in the south

**All Central Asian states as well as Azerbaijan will grow by 2050 due to high fertility rates and young populations; Tajikistan will even grow by 60 percent. The wealthier, Slavic republics of the north, on the other hand, will not be able to stop the shrinkage which can already be observed. In Russia, even the significant migration surpluses and a slightly rising fertility rate will not be able to counter the trend, since potential parents are missing due to the low number of children of the first two decades of independence.**



**Population projections from 2010 to 2050 (2010 = 100 percent)**  
(Source: United Nations, World Population Prospects: The 2008 Revision Population Database, New York)

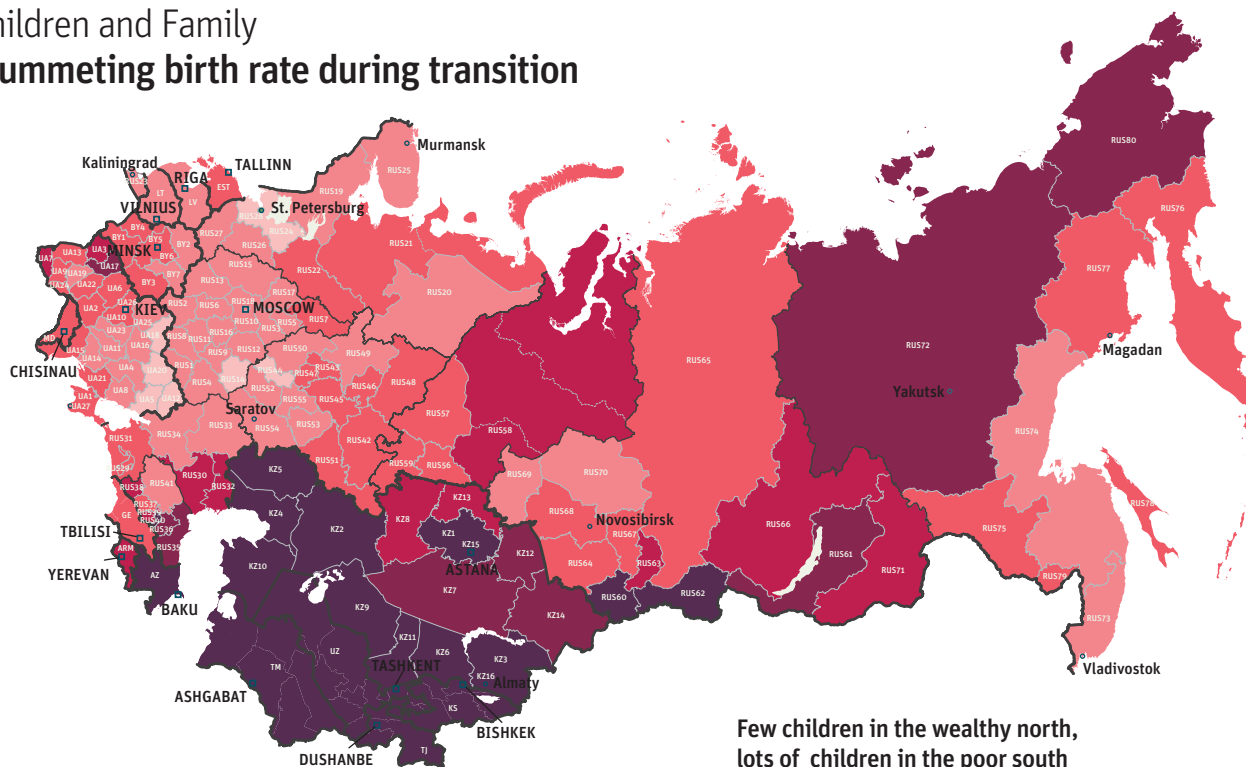
## 2

## Children and Family Plummeting birth rate during transition

Average number of children per woman on the territory of the former Soviet Union, 2009



(Source: see page 140)



**Few children in the wealthy north,  
lots of children in the poor south**

On 12 June 2008, 87 babies were born in the Russian oblast of Ulyanovsk in the Volga Federal District, about three times as many as on a normal day.<sup>19</sup> But this was no normal day; it was a Russian national holiday and simultaneously the deadline for the finale of the annual competition “Give Birth to a Patriot on Russia’s Independence Day”. Every couple which had a child on this date received a cash or material prize, such as a refrigerator or a washing machine, and, in addition, took part in a lottery for a Jeep named Patriot. The region’s governor, Sergey Morozov, announced the event in order to contribute to an increase in the low number of Russian children. He decreed 12 September, exactly nine months before the national holiday, a special holiday for “family communication”.

In 2006, Vladimir Putin had already pointed out in his state-of-the-nation address that the demographic crisis was one of the country’s most pressing problems.<sup>20</sup> A few figures give an idea as to why: while two million babies were born in Russia in 1990, ten years later only 1.2 million were born. In the same year, 2.2 million people died. The average number of children per woman sank in the first eight years following the fall of the Iron Curtain from 1.89 to 1.16. Since then, the annual number of children has risen again to 1.8 million and the number of children per woman has also recovered, as the 1.54 figure demonstrates.<sup>21\*</sup> In the future, however, the number of births will continue to sink despite slightly rising fertility, since the small cohorts of the 1990s will produce ever-fewer potential mothers in the future. The 20 to 29-year-old age group of women, who will contribute to most of the births, was still

In contrast to Europe, relatively large regional differences in fertility rates can be observed in the former Soviet Union. While the average number of children per woman in the north is usually between 1.3 and 1.7, the Central Asian states have rates of more than two and in some cases even three. Many of the differences can be explained by the level of development in the respective regions, their reigning views of gender and the populations’ religious and ethnic make-up. Nonetheless, the average numbers of children per woman have long been approaching one another.

\* The total fertility rate has been simplified and given as the average number of children per woman. It is ultimately a hypothetical measurement which draws conclusions about fertility patterns among women of certain age groups based on developments in a calendar year. A better measurement is the cohort fertility rate, which provides the actual average number of children per woman. This, however, is only available when women have ended their family planning at about 45 years old. Other figures, such as adjusted fertility rates (to mothers’ age or spacing of births) are not taken into consideration here since they are not available for all regions in question.



comprised of 11.6 million people in 2008. The five to 14-year-olds were comprised of but 6.5 million.<sup>22</sup>

Other Soviet successor states have similar problems: In Moldova, the average number of children per woman halved between 1990 and 2002, from 2.39 to 1.21.<sup>23</sup> Central Asian societies, which have many children, as well as the Russian South, also experienced a significant decrease in fertility rates. In most of these countries, however, the transition from the large family to the two-child family is still in full swing.

### Older mothers, fewer children

Throughout contemporary Russia, the number of children per woman already sank for the first time to just below two at the end of the 1960s, especially because more and more former rural dwellers moved to the cities and found work in industry. The fertility rate then remained steady, with minor fluctuations, until 1991.<sup>24</sup> Since 1992, the annual number of deaths has exceeded the number of births and young families in Russia, as in Belarus, Ukraine, Moldova and the Baltic states, are more often having but one child. This is not what most Russians want, however: in surveys, the majority say they would like two children.<sup>25</sup>

There have been many attempts to explain the drastic decline in births as the system underwent change. Material hardship and uncertain prospects immediately following the demise of the Soviet Union particularly prevented people from starting families. People had to live with decreasing wages or they lost their work entirely. The state had to drastically reduce social benefits because it also had to deal with empty coffers as a result of the economic crisis. The financial support remaining for young families was usually quickly devoured by up to four-digit inflation rates. Even ten years following the Soviet Union's fall, the risk of poverty for a Russian family upon the birth of a second child increased by over 50 percent.<sup>26</sup>

Since they have now overcome the worst hardship following the fall of the Soviet Union, citizens' newly-won personal freedoms are becoming apparent in individual lifestyles, at least in the wealthier northern states. More and more women are going to university and putting off childbearing until they are much older. This has been made possible by – among other things – modern contraceptives, which are now easily accessible compared to the Soviet era, when they were hard to come by or sub-standard. Nonetheless, the Soviet successor states still lag behind western industrialized countries when it comes to family-planning methods.

In the Soviet Union, the short supply of modern methods of contraception led to a veritable “abortion culture”: it was common for women to bear the number of children they wanted when they were young and then to prematurely end all further, unwanted pregnancies. At the beginning of the 1990s, there were still more than two abortions per birth in Russia. It was only in 2006 that the survival chances for unborn fetuses rose to over 50 percent. Despite this progress, Russia still has Europe's highest abortion rate.<sup>27</sup> It is also because of this that many expect the Kremlin to prohibit abortion in the wake of future policies promoting births. Where this could lead to, however, was already demonstrated between 1936 and 1954, when Josef Stalin pushed through a prohibition on abortion: instead of the hoped-for baby boom, statisticians noted an increase in maternal mortality, since abortions did not decrease but were, rather, performed illegally under medically and hygienically insufficient conditions.<sup>28</sup>

In particular, fertility rates of women under 25 have decreased dramatically: whereas in 1990 almost every sixth woman between 20 and 24 still bore a child, in 2009 it was only every 11<sup>th</sup> woman.<sup>29</sup> Many women, however, make up later for having put off children when young: Russian women over 25 now have more children than they did in 1990.<sup>30</sup> The average age at childbearing rose from 25.3 to 27.2, reaching the level of the late 1960s, before the sexual revolution encouraged Russian women to have children younger and younger.<sup>31</sup> Other changes confirm that Russia, like many of its neighbouring states, is slowly approaching Western European family patterns: more and more unmarried couples live together, more and more children are born out of wedlock and more and more children are not the result of the first solid relationship. This change is happening especially fast in the three Baltic states.

But the past cannot be shed overnight. The divorce rates among Russians, Ukrainians and Belarusians remain the highest in all of Europe.<sup>32</sup> In the 1970s, the relative ease of dissolving a marriage already served as a security valve for premature marriages.\* Now the average marriage age has shifted upwards, but, like the average age at childbearing, it has still not reached western levels.

These are all remnants of the Soviet attitude according to which a woman enters adulthood only when she bears her first child. Whoever did not have a child when young risked being stamped as an “old spinster” and, for health reasons, may not have been able to have children later. This in spite of the fact that women faced – and still face – a double-burden: the majority works, but can seldom rely on support from a partner when it comes to taking care of and raising children.

\* A special „bachelor's tax“ made early marriage financially appealing to men.

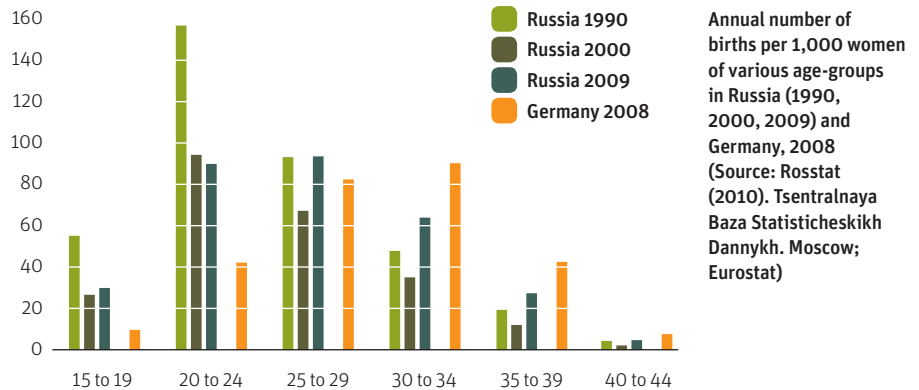
## Money does not make children

In light of high employment rates for women, the Soviet Union, like all socialist countries, created an extensive network of kindergartens. After the Wall fell, however, many of these institutions closed due to a lack of funds. Of the former 87,900 pre-school institutions, only 45,600 remain.<sup>33</sup> That the number of places per child has essentially remained steady is due only to the serious decline in births. Single mothers especially, of which there are many in Russia due to high divorce rates, have problems reconciling careers and families due to insufficient public child-care.

Furthermore, single mothers often run into financial difficulty: many men successfully evade their child-support obligations. For women, this is even worse since child benefits by no means ensure survival: even in the more generous regions in the Urals, the subsidies are just about 300 roubles, or seven euros, a month. Maternal leave laws do, on the other hand, provide security at first glance, guaranteeing 100 percent of wages for 70 days prior to and after the birth of a child. Yet many employers who receive the money from public coffers and who should be transferring it to employees do not meet their obligation.<sup>34</sup>

## Mothers in Russia are getting older

Women in Russia are not only bearing fewer children in comparison to 1990, they are also bearing children later. The slight rise in numbers of children since the beginning of this century can be explained by the fact that women over 24 years old are having more children than they used to. That the trend towards later childbearing could continue is demonstrated by comparison with Germany, where most children are born to women between 30 and 34 years old.



Vladimir Putin's family policy reforms in 2007 significantly expanded financial support for young families. Putin introduced subsidies for kindergarten fees and raised the birth benefit as well as child-care benefits which are paid for a child's first one-and-half years. The latter is 40 percent of the parental salary but not more than 14,000 roubles monthly. Unemployed women also receive 2,000 roubles a month for the first child and 4,100 for all succeeding children. Additionally, Putin created the so-called maternity capital, a one-time payment equivalent to 10,000 US dollars for the birth or adoption of a second child. It is adjusted annually according to inflation rates.\* The money is paid out on a child's third birthday and can be used for educational purposes, the mother's private retirement arrangement or to buy a flat. The last option is the only way of profiting in the short-term from the money, and it is a very important one: a dearth of housing is considered one of the

main reasons for the lack of offspring. An equivalent of 8,000 Euros, however, is hardly likely to enable a family to buy a flat.

Nonetheless, the maternity capital is one of the reasons for the most recent increase in births. Whether it can truly influence the average number of children per woman can only be determined, however, when today's mothers have passed childbearing age in 20 years, meaning when it is finally clear how many children they will ultimately have had. So it is highly possible that women have simply shifted the time at which they are bearing children in order not to miss out on the financial incentive. This short-term effect has been observed in other countries in which the state paid bonuses for offspring. Something similar was already seen in Russia in the 1980s, when Mikhail Gorbachev used financial incentives, among other things, to inspire people to start families.

\* If the maternity capital has not previously been claimed, it is paid for the birth of a third and every successive child.

Financial means alone cannot solve the dilemma facing the many women who have to choose work over children. Yet instead of promoting the modernization of society, Russia's and Ukraine's family policies constantly uphold tradition. In the current Russian Demographic Concept, an average of 1.95 children is the explicit goal for 2025. Furthermore, "traditional family values should be revived".<sup>35</sup> The experiences of other industrial nations show, however, that the rates of children are highest where gender equality is greatest and careers and families can be easily reconciled due to extensive child-care institutions. Steps in this direction have been taken in particular in the Baltic states. These have looked towards the Scandinavian countries, which have the necessary conditions and where the number

of children per woman is about 1.9. But in addition to the government, employers also have an obligation: flexible working hours and part-time work could promote the reconciliation of work and family. Neither of these is prevalent in Russia.

### Regional alignment in numbers of children

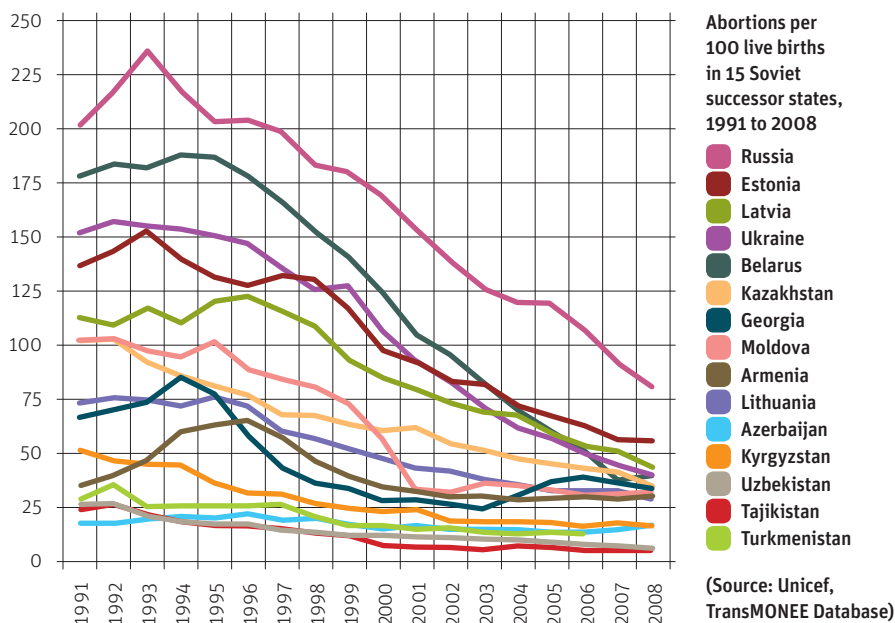
Regional differences in the average number of children per woman continue to decline, unaffected by the enormous upheavals of the 1990s – a phenomenon which has been noticeable for about half a century. In the 20 years since the demise of the Soviet Union,

the number of children per woman has fallen an average of 22 percent in the 39 regions of Russia in which the median was over 1.91 in 1990. In the 39 regions which lay below the median, it was only about 20 percent.\* That means that the various regions are becoming more similar with regard to family size.

In the meantime, there are only three regions in Russia in which enough children are being born to maintain the population. These include the poor mountain republics of Chechnya, Altai and Tuva, where the populations still lead traditional lifestyles. Also outside Russia, high numbers of children can practically only be found in economically underdeveloped areas with traditional family and social structures, such as in Tajikistan, Kyrgyzstan or Turkmenistan. On the other hand, there are very low numbers of children in the post-Soviet space primarily in cities such as Moscow, St. Petersburg or Kiev. But even the city-country divide has grown murkier. While women in rural areas of Russia still bore 60 to 70 percent more children than urban women in the 1960s, the surplus in the 1980s was only 50 percent and has since fallen to 34 percent.<sup>36</sup>

### Contraception is replacing abortion

Since the mid-1990s, the number of abortions has declined in all Soviet successor states. There has been a significant decrease especially in the mainly Slavic states of Russia, Belarus and Ukraine, where the rates were highest in the period following the fall of the Iron Curtain. In these countries, modern methods of contraception have increasingly become the preferred method of family planning. Nonetheless, there are still more abortions annually in Russia than in the entire EU, which has more than four times the people.



\* Since Ingushetia was not yet an independent region in 1990, it is not considered here. The total number of Russian regions sinks accordingly to 79.

# 3

## Migration Russia's demographic reserves

Russia was probably the first country in the world to establish an agency for migration management in 1763.<sup>37</sup> Catherine the Great wanted to attract specialists from a wide range of fields to come and populate, defend and cultivate the empire's vast expanses of land. The majority of those who answered her call were Germans. In fact, in the first nationwide census of 1897, 1.8 million people claimed that "German" was their native language.<sup>38</sup>

Now almost 250 years later, Russia has become the scene of a gigantic migratory movement once again. With regard to the total number of arrivals, Russia is the second most popular immigration country worldwide and strongly depends on further immigration.<sup>39</sup> After having strictly regulated migration for decades during the Cold War, Russia is now struggling to integrate its immigrants into society, who frequently live in the shadow of the law and regularly face discrimination.

Since the disintegration of the Soviet Union in 1991, Russia has gained some five million new inhabitants through immigration – almost as many as it had lost during the previous 70 years of Soviet rule.<sup>40</sup> Ethnic Russians, returning to their home country, account for the largest percentage of these new immigrants. When the former Soviet republics declared independence, Russians became expats practically overnight. In the first few years of independence, some three million Russians were forced to flee

as a result of economic hardship, hostility toward foreigners and regional conflicts.<sup>41</sup> Compared to the masses of immigrants flowing into Russia, relatively few people chose to emigrate. Only those who have historic homelands outside the former Soviet Union – like Germans, Greeks or Jews – left the country in large numbers. In contrast, the number of Russians who chose to move to the newly formed neighbouring states decreased dramatically, as Russian workers were no longer needed.<sup>42</sup>

Since the mid-1990s, economic factors have played an ever-increasing role for immigrants. According to recent estimates, up to seven million labour migrants reside in Russia during the summer months, most of whom come from the South Caucasus, Central Asia, Moldova and Ukraine. Many of them, however, do not have a valid residence or work permit.<sup>43</sup> They come to Russia, because at home, above all in the Central Asian countries with their young and rapidly growing populations, they cannot earn enough to provide for their families. On the other hand, Russia is experiencing a growing labour shortage as a result of recent economic growth and demographic change, and the wages are many times higher than what the immigrants could earn in their home countries.

Since the end of the Cold War, Russia's population has decreased by six and a half million, but without immigration, it would have declined by eleven and a half million.<sup>44</sup> The other Soviet successor states have to pay the price for Russia's migration surplus. With the exception of Belarus, all the new

republics have reported more emigration than immigration since the beginning of the 1990s.\* Kazakhstan used to be home to 16 million people. Although the flow of immigrants to this Central Asian country has increased in recent years because of its strong raw materials industry, it has lost around two million inhabitants just in the first 15 years of independence. Many of the emigrants were of German descent and chose to resettle in their historic country of origin.<sup>45</sup> Georgia, Moldova and Azerbaijan have suffered even heavier losses in population as a result of migration – the same is true for Tajikistan and Kyrgyzstan. And like in the countries of the South Caucasus, the actual emigration figures may well be much higher than the official statistics.<sup>46</sup>

### Political zig-zagging

During the Soviet era, government policies actively promoted population transfer between the various Soviet republics. In the beginning, such transfer occurred through resettlement programmes and even deportation, and later, mainly through financial incentives such as wage top-ups. In the 1930s, the government resettled millions of Russian workers to propel the industrialization and urbanization of the country. The prisoners of the Gulag were forced to work under the harshest conditions in the Asian part of the country. When World War II began and in the years that followed,

\* Belarus officially reports slightly positive net migration, but there is debate among experts concerning the credibility of the data.

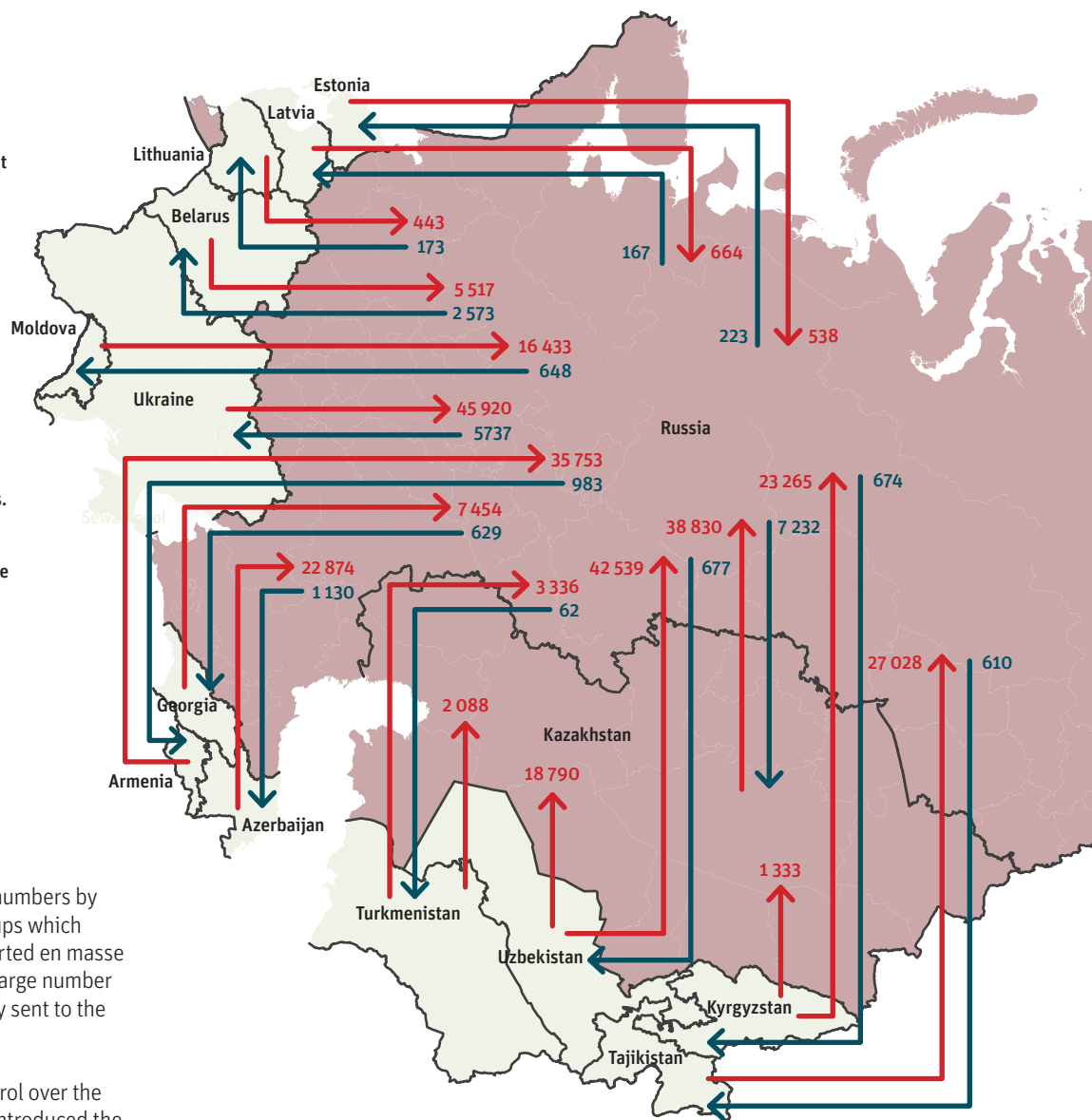
## All roads lead to Russia

Russia remains the destination of choice for labour migrants throughout most of the post-Soviet territory. Ukraine, Uzbekistan, Kazakhstan and Armenia supply the largest numbers of immigrants to Russia. However, the flow of immigrants from the Baltic states has practically come to a standstill. Since joining the EU in 2004, Estonians, Latvians and Lithuanians have been looking for employment more intensively in Western Europe. Along with Russia, Kazakhstan has become a popular destination for migrant workers from neighbouring Central Asian countries. In proportion to its population, the Kazakh capital city Astana has seen the highest influx of immigrants in the entire territory of the former Soviet Union.

they were joined in increasing numbers by members of various ethnic groups which Stalin mistrusted and had deported en masse to Siberia and Central Asia.\* A large number of soldiers were also continually sent to the farthest corners of the country.

In order to maintain better control over the flow of migration, the Kremlin introduced the propiska in the 1930s – a passport stamp, designating the place of residence and work of every citizen. In this way, officials were able to strictly regulate the number of immigrants allowed into large cities.

\* The ethnic groups deported by Stalin included the Chechens, Ingush, Volga Germans, Finns, Latvians, Lithuanians, Estonians, as well as Balkars, Greeks, Turks, Armenians, Romanians, Crimean Tatars, Karachay and Kalmyks.



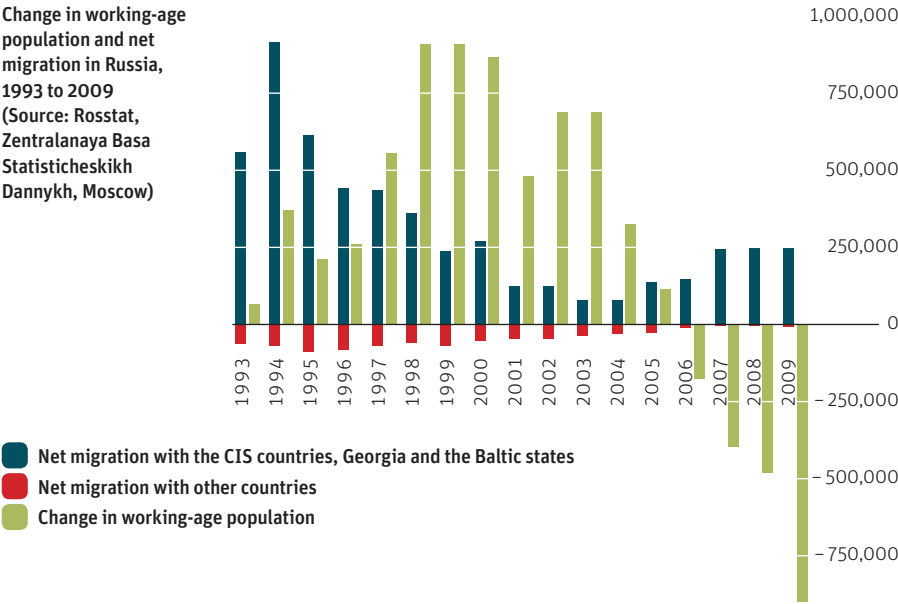
Selected migration flows in the post-Soviet space, 2009  
(Source: Rosstat, Demograficheski Yezhegodnik Rossii – 2010 g., Moscow)

Thanks to such policies, the constituent republics of the Soviet Union became ethnically quite diverse. In 1970, Russians comprised 43 percent of Kazakhstan's total population, making them the largest ethnic group in number.<sup>47</sup> However, in the final two decades of the Soviet Union, an increasing number of Russians and other ethnic groups who mainly settle in Russia, like the Tatars, began returning to their home countries. This trend quickened dramatically as the political system fell apart and ethnic conflicts flared.

## Immigration eases the labour shortage – but cannot prevent it

Russia recorded a migration surplus of 845,000 people when ethnically-motivated immigration reached its peak in 1994. The flow of immigration slowed considerably in the following years. But after Russia passed a more liberal immigration law in 2007, the official surplus doubled to almost 250,000 people. This massive increase is solely due to immigration from the CIS countries, Georgia and the Baltic states. There is very little migratory exchange between Russia and other countries. For many years, immigration helped replenish the supply of workers on the labour market. However, the low birth rate in the 1990s has led to a smaller pool of workers who are just now coming of age. As a result, the workforce is dramatically shrinking – a decrease of 900,000 workers was reported in 2009 alone. Even if all (regular) immigrants were of working-age – and, in fact, about 80 percent of them are – the deficit, which is expect to climb higher in the coming years, would only be offset by one-third.

Change in working-age population and net migration in Russia, 1993 to 2009  
(Source: Rosstat, Zentralanaya Basa Statisticheskikh Dannykh, Moscow)



Among the hundreds of ethnic groups in the former Soviet Union, there seemed to be no sense of a shared Soviet identity which government planners had hoped to achieve through population relocation.

Russian policymakers began supporting immigration in the early 1990s by largely opening the borders to immigrants. But the country was unprepared for the ensuing wave of newcomers and could only react

to the developments instead of shaping them. This had enormous repercussions for many migrants, as the Russian authorities were often unable to recognize retirement entitlements and academic certificates from other republics.

The ethnically-motivated migration that followed the collapse of the Soviet Union reached its climax in 1994 with an official influx of 1.2 million immigrants to Russia.<sup>48</sup> From this time onward, labour migration became more significant and confronted Russia with new challenges. The lack of explicit regulations in the labour market forced many immigrants from the South Caucasus or Central Asia, in particular,

into illegality. Human and drug trafficking, corruption and forced labour flourished in this environment. Moreover, Afghans, Chinese, Indians and citizens of various African countries have been using Russia as a transit country to enter the EU ever since.

The government introduced restrictive measures to counteract the massive flow of immigrants. One such measure mandated that, starting in 2002, each immigrant would have to register at the place of arrival within three days, at which time he would have to provide proof of an official place of residence. In light of Russia's notorious housing shortage, finding accommodation that quickly was impossible in many places. Instead of improving the migrants' situation, the new laws merely pushed more immigrants into illegality and barred them from taking up regular employment.

The Russian government amended its immigration policies once again in 2007. The biggest beneficiaries of the new, more liberal laws are citizens of the CIS states, who, at 95 percent, represent the overwhelming majority of all immigrants in Russia.<sup>49</sup> They themselves (and not the employers, as was previously the case) are issued a work permit. With this in hand, they can now apply for jobs in the region in which the permit was issued. The economic situation is used as the basis for determining how many work permits will be available each year and what regions will receive which percentage of potential migrant workers. In 2011, the government plans to issue approximately 1.7 million work permits – 200,000 fewer than in 2010 and significantly fewer than before the economic crisis of 2009.<sup>50</sup> The restrictions do not apply, however, to various specialists. Attracting highly-skilled workers to Russia, continues to be a major challenge though. Conversely, increasing numbers of highly qualified Russians are heading west – to Europe or the United States.



The new regulations and simplified procedures for issuing work permits to seasonal workers have significantly improved the immigrants' situation. As a result, the percentage of unregistered immigrants has dropped from 50 percent to between 15 and 25 percent.<sup>51</sup> Yet the reform measures have proven less successful in reducing the number of informally employed migrants and integrating them into the regular labour market. Even though three-quarters of all migrant workers received work permits in 2007, this did not guarantee them a job. If an irregular work relationship already exists, it is rarely formalized at a later time. Therefore, despite legal provisions offering visa-free entry into the country and residence permits, the majority of immigrants continue to work in the underground economy.<sup>52\*</sup>

### The Herculean task of integration

Many Russians believe that the increasing number of immigrants lessens their own chances of employment. When surveyed, the majority of the population regularly respond that they view immigration with concern rather than optimism.<sup>53</sup> There is more to this than economic fears. Politicians and the media have long sown resentment against non-Russian immigrants from the Caucasus and Central Asia, as well as Chinese immigrants in the Far East. On repeated occasions, nationalistic Russian organizations have lashed out at foreigners. For years, racially-motivated attacks have claimed dozens of lives and injured hundreds – particularly in Moscow.

In order to reverse this worrying development, Russia will have to do better at integrating immigrants into the regular labour market. The more often immigrants

are forced to live in the shadow of legality, the more likely Russians will believe that every Chechen is a potential terrorist and every migrant worker is out to steal a job from them. But the fact is that these often low-skilled immigrants earn such meagre wages no Russian would be willing to work for. An especially high percentage of immigrants earn their living in the construction and retail industries. And recently, more women have been coming to Russia in search of work. They usually look for employment in the service sector, for example, in geriatric care. Many of them, however, end up in prostitution.

In 2008, labour migrants in Russia sent approximately 26 billion US dollars back home to their families.<sup>54</sup> In other words, each migrant worker transfers about 100 US dollars out of the country each month.<sup>55</sup> Labour migration is thus not only a demographic safety valve for countries like Tajikistan, Kyrgyzstan and Moldova, but also an important factor in combating poverty – far more significant than international development aid. There is some debate, however, as to what extent these funds are capable of influencing the economic strength of the sender countries in the long-term. Most of the remittances are channelled into private consumption – not investment. Furthermore, these countries find themselves more dependent on Russia's economic fortune (and misfortune). For example, when the economic crisis in 2009 caused unemployment to rise in Russia, remittances fell by almost 30 percent.<sup>56</sup> Nonetheless, labour migration will surely continue in the foreseeable future due to the enormous welfare gap between these countries. Therefore, the question "Immigration – yes or no?" is not entirely up to Russia to decide.

From a demographic point of view, immigration is actually becoming more important every year. The number of working-age people in Russia has steadily decreased since 2007 and the trend is expected to accelerate in the coming years. Even if Russia gained a

net influx of 300,000 immigrants annually, its working population will continue to shrink by one million people each year until 2020.<sup>57</sup> There seems to be little chance of closing this gap completely – in 2009, the migration surplus amounted to just under 250,000 people.<sup>58</sup> Already in 2006, the Russian government launched a programme to encourage compatriots in neighbouring CIS countries to return home to Russia voluntarily. So far the programme has had little success – largely because most of the Russian expatriates, who were willing to return home, had already done so in the 1990s.

### Internal migration – few destinations for few migrants

While international immigrants are spread relatively equally across the country thanks to regionally issued work permits, there are only a handful of destinations available for inner-Russian migrants. In 2009, 45 out of 80 Russian regions recorded a migration surplus, although 29 of them owed this to international immigration alone. Out of the 16 regions which gained from internal migration in 2009, most were located in economically strong areas around major conurbations like Moscow, St. Petersburg, Novosibirsk and Yekaterinburg. The Southern Russian regions of Krasnodar and Stavropol continue to be popular destinations for migrants. Samara and Nizhny Novgorod Oblasts in the Volga Federal District also figure among the regions which have gained from internal migration since 1991. As a consequence of the economic crisis, they lost population to other Russia regions in 2009 for the first time in several years.<sup>59</sup>

\* Citizens from Armenia, Azerbaijan, Belarus, Moldova, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Ukraine do not require an entry visa to Russia.

Still, Moscow remains the only significant, inner-Russian destination for migrants. Out of the 162,000 people who moved from one Russian region into another in 2009, about 91,000 or 57 percent moved to the capital and its environs. St. Petersburg and surrounding Leningrad Oblast ranked a distant second at just under 20 percent as the destination of choice. The collapse of the Soviet Union hit the Far East and the northern European section of the country especially hard. Prior to the political upheaval, many Soviet citizens were lured to the farthest reaches of the country with state-funded wage bonuses and additional welfare benefits. Certain inhospitable regions also received new inhabitants through the Soviet programme of “raspredeleniye”, which sent university graduates to work there for three or four years. After completing their

service, many returned home and were replaced by new graduates. In the 1990s, this steady exchange became a one-way street. Masses of people left the northeastern regions of the country to head west or south, and there was no one to replace them. As a result, Chukotka Autonomous Okrug, which had once been home to 150,000 people, has lost approximately 100,000 residents since 1991. The situation is similarly dismal in Magadan Oblast, where 170,000 people have left the region that once boasted a population of 370,000.<sup>60</sup> This development has hit rural areas especially hard, where entire villages are disappearing.

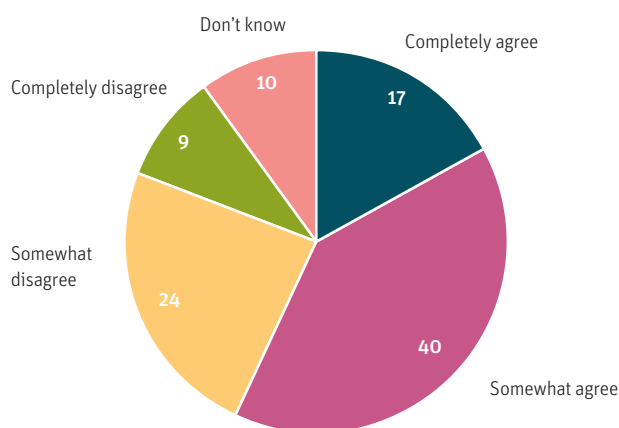
Compared to the Soviet era, the mobility of the Russian people has fallen by more than 50 percent. In 2009, only 1.7 million people changed their place of residence inside Russia – three million fewer than in 1989.<sup>61</sup> Internal migration could help ease regional imbalances, e.g. with people leaving

regions with high structural unemployment for places with a labour shortage. But before this can happen, various obstacles will have to be overcome. For example, many large cities that need skilled workers suffer from an acute shortage of affordable housing. As a result, many people commute on a weekly or monthly basis from their home to their place of employment. Also complicated registration procedures represent a hurdle to spurring higher internal migration, as well as the shortage of work agencies which could network employers and job-seekers on a national level.

## Xenophobia in the middle of society

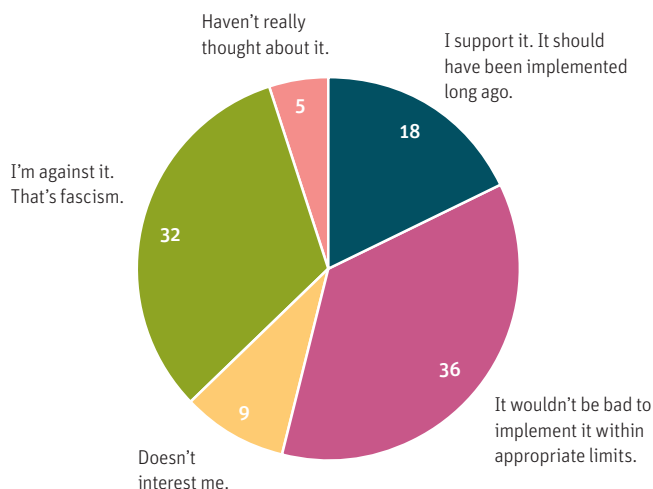
Even though Russia strongly depends on immigrants from other countries, a large number of Russians exhibit a rather xenophobic attitude. Immigration is not regarded as socially enriching or as a necessity, but rather a threat.

How strongly do you agree with the statement that we should show foreigners in Russia that we do not want too many of them to come here?



(Source: Levada Center, nationwide survey, 20 to 23 June 2008, 1,601 respondents)

What do you think of the statement „Russia for the Russians!“?



(Source: Levada Center, nationwide survey, 20 to 23 November 2009, 1,600 respondents)



# 4

## Health Alcohol consumption as business cycle indicator

Western Europeans still admire Mikhail Gorbachev for opening the Soviet Union to the rest of the world. Russians, however, do not have such a high opinion of him. They remember him as the leader who spearheaded the campaign against alcohol. In 1985 the price of alcoholic beverages began increasing dramatically and restrictions were implemented on conditions of sale.\* With these measures in place, the government succeeded in decreasing the sale of alcohol by more than 60 percent within two and a half years.<sup>62</sup> Most importantly, the average life expectancy in Russia began increasing again, which, in contrast to other western industrial nations, had steadily fallen since the beginning of the 1970s. In 1988, Soviet leaders discontinued the unpopular anti-alcohol campaign, because the imposed restrictions had resulted, among other things, in a boom of self-distilled vodka, so-called “samogon”. In hindsight, many Russians regard this experiment as the beginning of the end of the Soviet Union and as the cause of the gaping budget deficit which significantly hampered the first free-market reforms.

Following the campaign’s conclusion, the gains in life expectancy were lost again quickly. In 1994, Russians could expect to reach the age of 63.9 years – six years less than in 1987. The average life expectancy for males was only 57.4 years – on average, they were not even able to officially retire at 60. Between 1994 and 1998, life expectancy briefly resumed its uphill climb until falling

again in the aftermath of the Rouble crisis. Since then, the country’s most important health indicator has risen to 67.9 years – about the same level as that of 1960.<sup>63</sup> In effect, the average Russian life span is about six years shorter than in China and almost 13 years shorter than in Germany.<sup>64</sup>

The mortality rate of working-age men is largely responsible for this enormous disparity. In 2008, an average of 10.7 out of 1,000 men between the ages of 16 and 59 died – three to five times higher than in countries at a comparable stage of economic development.<sup>65</sup> According to estimates by the World Health Organization, premature death in Russia accounts for 16 fewer years of life for males and seven fewer years of life for females.<sup>66</sup> Russian women live some 13 years longer than men – the largest disparity in life expectancy between the sexes in the world. The only other countries where a similar imbalance exists are in neighbouring Ukraine, Belarus, Kazakhstan and the three Baltic states.<sup>67</sup>

But what exactly are so many relatively young Russian men dying of? The leading cause of death is cardiovascular diseases, followed by what is called “external causes”. These include an especially large number of homicides, suicides and accidents, which, in terms of the total population of Russia, occur four times more frequently than in the EU.<sup>68</sup> 72 percent of all homicides and 42 percent of all suicides can be attributed to alcohol abuse.<sup>69</sup> For a long time, cardiovascular diseases were not attributed to excessive alcohol consumption. But in the meantime, studies show that certain drinking habits can significantly increase one’s risk of developing fatal heart disease. This applies particularly to Russia, where alcohol is not so much drunk

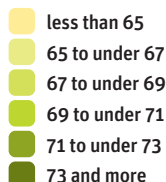
for enjoyment with food – like in France or Italy – but consumed in high-proof form for the purpose of getting intoxicated.<sup>70</sup> In each of these countries, life expectancy fell in proportion with rising alcohol consumption. Mostly unemployed and less educated people tend to abuse alcohol in order to escape the reality of poverty and lack of opportunity. Today, Russians age 14 and older consume between 15 and 18 litres of pure alcohol each year, equivalent to approximately 75 to 90 half-litre bottles of vodka.<sup>71</sup>

According to extensive studies, between 31 and 52 percent of all fatalities among male adults in typical Russian industrial cities are alcohol-related. In more rural areas, anti-freeze, perfumes and similar substances containing alcohol are especially dangerous as these are often consumed as an inexpensive vodka ersatz.<sup>72</sup>

One must look back far in the past to understand the central role of alcohol in Russian society. In the Middle Ages, the combination of grain farming and long, cold winters contributed greatly to forming a pronounced drinking culture. Later the Czars actively endorsed alcohol consumption, as the alcohol monopoly financed one-third of their national budget. Although Lenin attempted to reduce alcohol consumption through his “New Economic Policy” at the start of the 1920s, Stalin lifted all the restrictions in 1926 in order to raise money for his push to industrialize the country. Yet the discrepancy between the life expectancy of citizens in modern-day Russia and that in western nations only first appeared in the late 1960s. Up until that time, the large increases in life expectancy in both East and

\* One of the more drastic measures, which Russians continue to criticize to this day, include the decision to destroy vineyards in Southern Russia, Moldova and the Crimea.

**Life expectancy at birth  
in the former Soviet Union  
in 2009**



(Source: United Nations, National Statistical Offices, World Population Prospects: The 2008 Revision Database, New York)



West were the result of progress made in the fight against infectious diseases. After that, the West continued to see improvements in general health thanks to new advances for treating such chronic diseases as diabetes, stomach ulcers, cardiovascular diseases and cancer. In addition, preventative medicine, regular medical check-ups, environmental protection, less physically wearing labour and healthier lifestyles all had a positive effect on life expectancy. In the paternalistic system of the former Soviet Union, citizens were not inclined nor encouraged to take such responsibility for their own health. Aside from alcohol, the risky lifestyle of Russian citizens is exacerbated by increasing tobacco consumption, which has been on the decline in Western Europe for years. More than one-third of all Russians over 14 years of age and almost two-thirds of men in this age group smoke cigarettes on a daily basis – more than in any other European country.<sup>73</sup>

However, alcohol and tobacco are not equally popular everywhere in the former Soviet Union. In the southern, more Muslim-oriented regions of Russia, e.g. Central Asia and the South Caucasus, people drink less alcohol in comparison. This might explain why men in Kyrgyzstan live four years and in Tajikistan three years longer than the average Russian, although these countries are far poorer in terms of GDP.<sup>74</sup> Even within Russia, one can identify a generally higher life expectancy in poorer regions than in more affluent areas. This may be partly due to higher consumption of hard drugs, predominantly heroin, which has now become a serious problem in the industrial cities.

### Where life ends too early

Compared to neighbouring countries, life expectancy in Russia is relatively low. In some crisis-ridden regions of Siberia and Northwest Russia, life expectancy has barely risen over the age of 60. Across the country, men die much earlier than women. The inhabitants of the Baltic states, however, live comparably longer. According to official statistics, life expectancy is extremely high in the Caucasus, yet some researches question the credibility of the region's official data.

### Old and new scourges of humanity on the rise

One of the direct effects of drug consumption on general health is its role in the spread of Aids, as HIV is frequently transmitted through contaminated hypodermic needles. According to recent estimates, one percent of all 15 to 49-year-olds in Russia and Ukraine are infected with HIV, the majority of whom are men.<sup>75</sup> They, in turn, are increasingly spreading the disease to women through sexual contact, whereby a third mechanism, mother-to-child transmission, may play an even larger role in the future. In contrast to alcohol, HIV infection and Aids are also

affecting Central Asian countries. Although fewer of their citizens are infected, the number of new infections is increasing at a disturbing rate.

What all the former Soviet countries have in common is how each society often stigmatises and marginalises those with Aids. Frequently they belong to groups that already exist on the fringe of society – drug addicts, prison inmates, halfway-house children, homosexuals and prostitutes. This lack of tolerance is a serious hurdle for disease prevention measures, e.g. through sexual education and improvement in hygiene. And treatment of the disease is not much better; only about 20 percent of those with Aids in Eastern Europe and Central Asia have access to effective therapy.<sup>76</sup>

Tuberculosis is also making a comeback in Russia as a result of poverty and deterioration in medical care. The number of new, documented cases of tuberculosis increased to 80,000 between 1990 and 2000. When adjusted to the size of the population, that is ten times more than in Great Britain or the Netherlands.<sup>77</sup> Since then, the number of tuberculosis cases has stagnated at a high level.<sup>78</sup> The potential of new multi-resistant pathogens is a growing cause of concern. The risk groups are largely identical to those who have Aids, as their weakened immune system significantly increases the danger of infection. However, cases of tuberculosis are concentrated geographically in Siberia, specifically the

rural areas of Tuva Republic and Amur Oblast, where there is generally no possibility to quarantine the sick. Even so, Russia invests almost 1.3 billion US dollars in fighting TBC each year. Among the 22 countries most severely affected by tuberculosis, no other country invests as much in combating the disease – although no other enjoys such a high a standard of living either.<sup>79</sup>

### Problems abound despite a slight recovery

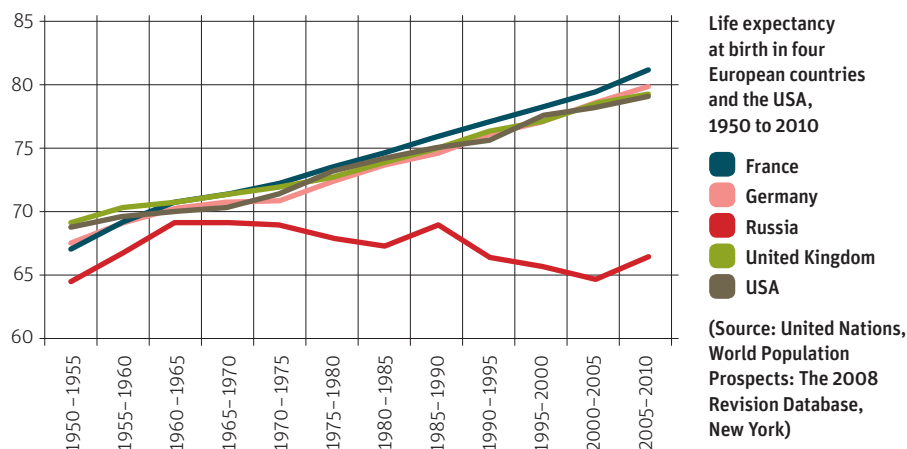
What can politicians from Kaliningrad to Vladivostok do to prevent their country from losing tens of thousands of people each year to avoidable deaths? Based on the experience of Western European countries, it seems that high-risk groups require more information about the dangers of excessive alcohol and tobacco consumption, as well as unhealthy eating habits and lack of regular exercise. This can, however, only be achieved through social and economic policies which combat the actual roots of the problems. As long as poverty, lack of opportunity and inequality continue to afflict large segments of the population, it is unlikely that people will engage in more health-conscious behaviour.

In early 2010, the Russian government once again initiated a wide-ranging anti-alcohol campaign. With a mandate to sell half-litre bottles of vodka for no less than 89 roubles (approximately two euros) and more restrictive regulations on sales and advertising, the government hopes to cut alcohol consumption in half by 2020. The current minimum price for vodka is relatively low, but is set to significantly increase in coming years. The long-term success of the campaign will depend on how well it cuts down on illegal distilling.

As for promoting a healthier lifestyle, there are signs of progress. Life expectancy in Russia has been on the rise since 2003 – largely because of fewer deaths caused by external causes.<sup>80</sup> Although this trend slowed down during the economic crisis in 2008 and 2009, there is no evidence that it has reversed.<sup>81</sup> In the future, demographics may also contribute to alleviating the country's struggle with alcohol. For example, beverages with low alcohol content, such as beer and wine, are more popular among young people than high-proof spirits. Approximately 80 percent of 18 to 24-year-old Russians drink beer, while only 25 percent drink vodka. In contrast, almost 60 percent of those over 39 years of age drink vodka and another ten percent drink samogon.<sup>82</sup>

### Lagging behind Europe

Life expectancy in Russia kept pace with that of western industrial nations up until the mid-1960s. But while life expectancy continued rising in the West thanks to improved living conditions, it stagnated in Russia and then began falling at the beginning of the 1970s. Mikhail Gorbachev's anti-alcohol campaign resulted in only a short-lived rise in the mid-1980s. Only in recent years has Russia seen a noticeable improvement in national health.



The health care system is also in desperate need of reform. The system was completely subsidized by the government during the Soviet era, but with the establishment of a public health insurance industry at the beginning of the 1990s, there has been a growing disparity in the quality of health care. The insurance premiums are generally administered by region, and in many places, they do not sufficiently cover the cost of treatment guaranteed by the constitution. Often those who can pay out-of-pocket are the ones who receive treatment. And those who cannot have to pay for it – in the worst case – with their lives. In 2006, the number of diagnosed cardiovascular diseases in the crisis-ravaged region of Pskov, south of St. Petersburg, exceeded the number of deaths by just 20 percent. In other words, almost every other patient succumbs to the disease. In the affluent, oil-rich regions of the Ural and the Volga Federal Districts, e.g. the Republic of Tatarstan and Bashkortostan, five out of six patients are cured. This can be attributed, on the one hand, to better quality of treatment, and on the other, to the fact that a broader segment of the population has access to the health care system.<sup>83</sup>

In order to counter this disparity in medical care, the government announced in 2006 that health care would be one of four major national projects, for which it pledged to appropriate a large increase in funding. The most recent data show that access to the health care system has indeed improved since the beginning of the new millennium.<sup>84</sup> Vladimir Putin has pledged to invest an additional 300 billion roubles – approximately seven billion euros – into the health care sector beginning in 2011.<sup>85</sup> The plan also calls for an increase in the employer health insurance contribution from currently 3.1 to 5.1 percent. This increase comes at a crucial time, as the demographic development of an ageing society is

## Lethal hazards

The disparity in life expectancy between Russia and members of the EU is largely due to the fact that Russians die of heart disease more often than Western and Central Europeans. They are also more likely to fall victim to violent crime and traffic accidents. The probability of being murdered is 20 times higher in Russia than in the EU. Generally speaking, alcohol plays a decisive role in the mortality rate. Infectious diseases are responsible for far fewer deaths in comparison. Even so, the mortality rate is significantly higher in Russia than in the EU as tuberculosis and HIV/Aids are comparably more widespread.

Number of deaths for every 100,000 inhabitants aged 0 to 64 in Russia and the EU according to cause of death\*, 2006  
(Source: World Health Organization, European Health for All Database, Geneva)



expected to dramatically inflate health care expenditure. The percentage of the population age 64 and older is predicted to increase from the current level of 14 percent to just under 20 percent by 2030.<sup>86</sup>

In addition to modernising the technical apparatus at clinics and doctor's practices, the structure of health care must be modified to meet the challenges of today and of the future. The problem is that the system continues to focus on combating infectious diseases and pays little attention to curing

chronic illnesses. Many patients are treated by highly-paid specialists in hospitals, yet there are far too few general practitioners who could potentially treat one-third of all out-patient cases at a fraction of the cost.<sup>87</sup> But because general practitioners were often insufficiently qualified in the Soviet era, people have little confidence in them today. The health care concept put forth by the Russian government pledges to change this by 2020.<sup>88</sup> Of course, training thousands of general practitioners will require significant time and money. To make matters worse, a powerful lobby of medical specialists is fighting to prevent a general overhaul of the system.

\* The mortality rates are age-standardized. This means that they signify the hypothetical rates if Russia's age structure were the same as the EU's. Because Russians are somewhat younger on average than citizens of the EU, the actual disparity between Russia and the EU is negligibly smaller than indicated here.

# 5

## Education Quantity instead of quality

The airplane manufacturer Sukhoi in Siberian Komsomolsk-on-Amur is a model enterprise of the Russian weapons industry. The state corporation produces fighting jets. In August 2010, Sukhoi made headlines: seventy employees had phoney engineering degrees. The corporate management did not, however, view this as sufficient reason to let the employees go: degrees were simply a formality and the employees had been with the company for years.

The dishonest acquisition of academic degrees has taken on threatening proportions in large parts of the former Soviet Union. There are no exact figures, but experts estimate that, depending upon the field, between 30 and 50 percent of doctorates in Russia have been purchased. Degrees in medicine and law are in particular demand.<sup>89</sup> In the long-term, this will undoubtedly cause extensive economic damage. The Department of Economic Security in the Russian Ministry of the Interior estimated that there were 5.5 billion US dollars in bribe-money in the educational sector in 2009. 1.5 billion dollars alone were paid by beginning students in order to fraudulently gain access to universities.<sup>90</sup> This means that there is a growing number of pseudo-experts making the successful pursuit of the modernization of either society or the economy doubtful.

Corruption in the educational system intensified when the sector was liberalized in the 1990s. During the Soviet era, university education was free and a degree promised nothing more than a badly-paid job in a state company determined by the government. When, following the fall of the Soviet Union, the government significantly cut educational subsidies, colleges and universities began to fight for survival. Despite the introduction of tuition fees, the quality of education, which once enjoyed a good reputation even in the West, could not be maintained. Many teachers and university professors are still convinced of the superiority of the old system, however, and stand in the way of post-industrial progress in education.

### Crowded lecture halls

Initially, statistics justified the viewpoints of conservative Russian pedagogues. In comparison to other industrialized countries, Russia provides a high degree of education. 88 percent of citizens between 25 and 64 have a school leaving degree comparable to the German Abitur. Only four percent leave school without any kind of secondary leaving degree. More than half of the adults have completed a degree at a university of applied sciences or comprehensive university.<sup>91</sup> In some fields, the number of academics among the employed population is higher than in any other state in the OECD. What is also astounding is that the revolutionary leader Vladimir Lenin's motto, "learn, learn and once again learn," which could not go unheeded in any Soviet classroom, did not merely survive communism. The annual number of

college graduates even multiplied more than three-fold between 1989 and 2009. And this was true not only among the urban but also among the rural population and for both sexes.<sup>92</sup>

Russia should, therefore, be ideally equipped to compete in the race of modern information societies. In absolute numbers, it has the world's fifth-largest pool of academics, following the USA, China, India and Japan. Of the world's 350 million people with a university degree, 20 million live in Russia, which, with two percent of the world's population, can boast six percent of all academics.

Yet the academic sector's achievements fail by far to meet expectations. Between 1995 and 2008, the United States Patent Office (USPTO) registered 2.3 million patents worldwide. Only 0.1 percent came from Russia. A scale which compares USPTO patents with the percentage of the population with a university degree ranks Russia 48th. This means it falls far behind all industrialized western countries as well as countries such as Costa Rica, Jordan and Mauritius.<sup>93</sup> Essentially, the following rule of thumb applies: the richer the country, the more patents per person with university degree. According to per capita GDP and education levels, Russia should be registering three times as many inventions.\*

\* Investigations carried out by the World Intellectual Property Organization come to similar results.

Patent applications per one million inhabitants, 2008



(Source: Rosstat, Regiony Rossii: Sotsialno-Ekonomicheskie Pokazateli – 2009 g., Moscow; World Intellectual Property Organization, World Intellectual Property Indicators, Geneva)



### Few centres of innovation

The distribution of patent applications in the post-Soviet territory reflects the regions' economic strengths. Innovation is strongest in Moscow and St. Petersburg as well as in Siberian Tomsk and weakest in the Central Asian countries and in large parts of Ukraine. Compared to the inhabitants of many Western European countries as well as Japan, South Korea and the United States, Russians register extremely few patents.

In citation indexes, which count among the criteria for scientific efficiency, Russia also ranks poorly. Between 1990 and 2008, the number of publications by Russian scientists in international journals stagnated, despite the joint facts that the number of academics in the country doubled, former political barriers ceased to exist and the number of publications increased worldwide.<sup>94</sup>

### Modern structures gain foothold slowly

Mono-causal explanations for the fact that the number of students is growing more intensively than the country's innovation strength fall short. Only the interplay of various factors gives an idea as to why Russian developments differ from those in other countries. For example, young men at universities often seek a refuge from the military, as students are temporarily released from military service. Nor does the Kremlin's patriotism halt at universities, which rely more on native researchers and less on exchange programmes or cooperation with international research institutions. This deprives young Russian researchers of the opportunity for important exchange with recognised international colleagues. Whoever does manage to find such opportunities often seeks employment abroad after completing studies, where young academics are generally paid better and the universities

are better equipped technically. A perfect example is the case of the Russian researchers Andre Geim and Konstantin Novoselov, who won the Nobel Prize for physics in 2010: educated in Moscow, they now work in Manchester, England.

It has also been difficult to implement the Bologna Process, to which Russia officially committed in 2005. University administrations and many professors who fear the loss of Russia's educational identity are the main opponents of the reform. Higher



competitiveness also feeds their rejection. This reveals one of the cardinal problems of the Russian higher education: insufficient mobility. Many instructors teach at the same alma mater where they once studied. Hardly anyone has visited another Russian or foreign university in the course of his or her career. Another hurdle on the way to reform is that the bachelor's degree, particularly if acquired abroad, is not highly valued in the Russian labour market.<sup>95</sup>

Innovation centres and technology parks like those in the Moscow suburb of Skolkovo, where a Russia Silicon Valley is planned to be erected by 2015, are supposed to promote greater cooperation between academic teaching and the labour market. The Kremlin is not only relying on financiers from the economic sector; it is also attempting to attract researchers and top-level scientific managers from the West. Accordingly, Moscow declared education a "national project" in 2006. Universities are to be evaluated according to international criteria and flag-ship institutions will enjoy special funding as "national research universities" and "federal universities." So far, however, the results have been discouraging. Of about 3,000 accredited university institutions, no more than 100 to 150 are competitive, according to Education Minister Andrei Fursenko.<sup>96</sup> The "Times Higher Education Index" ranking, which takes a look at 200 of the world's leading universities, did not include a single Russian institution in 2010.<sup>97</sup>

Vocational training is also deficient. Employers often complain that graduates are not up to the requirements of the work. Handicraft trades and manual labour are not socially prestigious. This must change in order to counter the dearth of skilled labour in production. The average age of an employee in industry is currently 54 years. Moscow has developed a promising plan: its "labour force" programme is trying to attract large local companies as sponsors for students in technical fields and to get them to guarantee subsequent employment.

Since vocational training is so unpopular, less-talented students try to enter university, lowering the general level of education. Due to a demographically determined decrease in the number of students, universities will soon need to compete for students, however, accepting sinking levels of quality into the bargain. In the 2011/2012 school year, only 15 million children will attend school, which is eleven million fewer than in 1996/1997.<sup>98</sup>

In order to guarantee higher standards and to fight corruption, the government introduced a system of nationally uniform admission exams at the beginning of this century. These are intended to promote competition among the institutions and the quality of education. Those who pass the tests can apply nationwide using their points.

Yet many universities have been waging a bitter war against the reform, which impinges long-term upon their autonomy in selecting students. A few universities have managed to reclaim a certain degree of freedom with regard to the selection of applicants. But this is not the only reason that it remains a question as to whether the tests can effectively fight corruption: the first regional trials revealed irregularities in test evaluation. Those who can afford it also frequently and successfully contest test results. Corruption has also been observed to have been shifting to high-schools.<sup>99</sup>

Reforms similar to those in Russia have also been introduced by many other CIS countries such as Ukraine, Georgia and Kyrgyzstan. In comparison to shrinking Slavic societies, however, Central Asia is facing entirely different challenges. The wealth of children is leading to a constantly growing number of students of whom only a few, due to comparatively low levels of education in the region, will be able to study. Educational quality also lags significantly behind Russia's and the Baltic states'.

Recently, international Pisa studies have shown that Russian schools have catching up to do. Russian pupils had below-average results in all three testing fields.\* This is explained not only by poorly-qualified, over-aged teachers but by outdated curricula and methods. A Russian grammar school pupil has to master more material than his or her counterparts in the West, but the aim of instruction focuses primarily on memorization and regurgitation. Instead of promoting critical thinking and study, instruction tends to punish independence and autonomy.

Education and teaching thus reflect social and political norms. Modernization, when and if it takes place, continues to be driven top-down. The educational system is not laying the groundwork for grass-roots creativity and innovation by a large portion of the general population.

\* Reading, natural sciences and mathematical problem solving.

# 6

## Welfare Room to grow

The economic upheaval of the 1990s was a traumatic experience for the Soviet successor states. Sinking production rates, unemployment and inflation led to the impoverishment of large parts of the population. The trend towards rising real income, which lasted until the economic crisis of 2009, only took off following total collapse at the end of the last century. Where a Russian had an average of 1,700 roubles per month in 1999, ten years later he already had 16,900, or about 400 euros. Even excluding inflation, this was a significant increase: while income rose by about 900 percent, consumer prices only rose by 300 percent.<sup>100</sup>

Yet social inequality has grown alongside the Russian economy. A few oligarchs have earned a fortune by selling natural resources such as oil, gas, aluminium and other metals as well as coal and wood while a broad middle class has still failed to form. This is demonstrated by the Gini coefficient, an internationally recognized measurement for the distribution of income or wealth.\* In Russia, the coefficient rose from 0.39 to 0.44 between 1999 and 2009. In Ukraine, Kazakhstan and Armenia, however, the coefficient recently fell to values of about 0.3, which are typical for developed countries.<sup>101</sup>

That there is still no real middle class with purchasing power in large parts of the post-Soviet space has been documented by a household survey conducted by the

GfK Association in Russia, Azerbaijan, Kazakhstan, Belarus, Ukraine and Uzbekistan. Only 0.7 percent of the participants said they had enough savings for all consumer goods, while a further 4.7 percent could afford everything except own housing. Another 20.5 percent said that they could buy all household appliances but not a car. The large majority (55 percent) had enough money for food, clothes and smaller household items but could not afford larger goods such as TVs, refrigerators or washing machines. At the lower end of the scale, 16.9 percent had enough for food but not for clothes, and 2.3 percent even had problems with daily food expenses.<sup>102</sup>

In accordance with these figures, about 40 percent of household income in Russia and Ukraine is still spent on food; in highly developed countries, this figure is significantly lower. Even in the former Eastern Bloc countries of the Czech Republic, Hungary and Poland the share hardly exceeds 20 percent. The development gap can also be

seen in modern services such as Internet access. Only 32 percent of the adult Russian population has Internet and significantly fewer have access in Belarus, Ukraine and Moldova. Only the Baltic states can compete with Central and Western Europe in terms of Internet access. In these countries, between 59 and 69 percent of the adult population are online.<sup>103</sup>

### New consumer groups and incipient modernization

Alongside the economy, demographics also impact consumer structures. In the upcoming years and decades, Russia's enormous domestic market will grow smaller and be characterized by ever-older consumers. By 2030, the number of pensioners will have grown from today's 30 million to 40 million. Almost every third Russian will have surpassed working age, according to today's definition.<sup>104</sup> This could permanently alter consumer behaviour since older consumers

### TVs and refrigerators remain unaffordable for many

We do not have any financial difficulties; we can afford a flat or a house

We can afford many things except expenses such as a flat or a house

We can afford household items but it would be difficult to buy a car

We have enough money for food, clothes and smaller household objects but it would be difficult to buy a TV or refrigerator

We have enough money for food but not enough money for clothes

We do not always have enough money for food

10 20 30 40 50

Household survey in Russia, Azerbaijan, Belarus, Kazakhstan, Ukraine and Uzbekistan, 2010  
(Source: GfK Association)

\* The Gini coefficient is a scale from 0 to 1. A value of 0 means that everyone in a given country has the same income. A value of 1 means the entire national income is in the hands of a single person.



demand different products than younger ones. In developed countries, pensioners spend a larger part of their income on health care and medicine as well as housing and energy.

Yet at the moment, pensioners hardly play a role as consumers in Russia. While their pensions were often paid with considerable delay in the 1990s so that their real value had largely been destroyed by rapid inflation, they now receive monthly payments which are more or less regularly adjusted to price level increases but are still barely sufficient to cover basic expenses. In the short-term, the low purchasing power of the elderly will not change since the next generation of pensioners has little to fall back on due to the chaos following the collapse of the Soviet Union; nor will they really profit from the newly introduced funded pillar in the pension system. It is only in the mid- and the long-term that pensioners, via continuous economic growth, can become a strong consumer group similar to those in Western Europe.

Among the countries surveyed, there are some interesting similarities in the relationship between educational attainment and purchasing power. A completed secondary education generally protects people from poverty, defined as not having enough money for food and clothes, but a university degree does not guarantee a significantly higher income.<sup>105</sup> This has to do with the fact that, on the one hand, university graduates often find jobs in public service which are traditionally paid poorly. On the other hand, good money can be earned in the shadow economy without higher education.

Underdeveloped consumption and production patterns can best be observed in retail trade. Whereas in Western Europe, large supermarket chains dominate commerce, in Russia, Kazakhstan and Ukraine, it is primarily small mom-and-pop stores and street markets. It is unlikely that these will be around for long, however: change is already underway. The cumulative market share of discounters, supermarkets and so-called hyper-markets in Russia such as Sedmoy Kontinent, Auchan, O'Key, Spar and Billa was but 14 percent in 2005; by 2009, it had grown to 34 percent. Yet compared to Poland, the Czech Republic and Slovakia, for example, with shares of 60 to 75 percent, there remains an enormous gap.<sup>106</sup>

The housing market is also lagging behind. Russians spend very little for accommodation and utilities – a mere nine percent of their income in contrast to the roughly 20 percent in Central European countries.<sup>107</sup> This is partly related to the fact that, following the disintegration of the Soviet Union, people could become owners of their previously state-owned flats for free and still have to pay relatively little property tax. Households also continue to benefit from an artificially low gas price, which the government is nonetheless increasing step-by-step to meet market levels. Select groups such as veterans or low-income earners also have access to further subsidies for utilities. Whoever still lives in state-owned property also pays rents well below market prices. The further the liberalization of the housing market proceeds, however, the more money citizens will have to pay for their housing.

The most pressing problems are the shortage of available housing and the miserable state of a great deal of property. Since market rents are unaffordable for most people, several generations often live together under one roof. Families which once had fewer than five to ten square metres of space per person could, until recently, apply for subsidized housing, although they had to face a years-long wait. Since the construction of social housing is proceeding very slowly, however,

the waiting list still contains about 2.9 million families.<sup>108</sup> There are other hurdles on the way to ownership. Since free or cheap living was essentially a basic right during the Soviet era, many people remain sceptical when it comes to taking up a loan. The thought of having to pay instalments and interest rates still frightens many. This is also why only 0.8 percent of Russia's population maintain that they are in a position to buy a flat.<sup>109</sup>

In the long-term, both consumer behaviour and market structures in the former Soviet Union should approach Central and Western European patterns. This is demonstrated, for example, by bank accounts: the share of the Russian population which has a bank account rose between 2005 and 2009 from 43 to 73 percent, which is higher than in Poland.<sup>110</sup> The speed with which the remaining gap will be closed depends upon whether or not the economy can continue its upward trend of the last decade following the crisis of 2009. The upswing following the turn of the century started, however, from an extremely low level and depended in great part on the export of raw materials. In order to create a broad group of consumers in the future and to attain greater prosperity, the country needs an educated workforce which generates new jobs through innovation and simultaneously drives back the shadow economy and corruption.



## Religion and Ethnicity

### Renaissance after 70 years of suppression

The demise of Communism also ended state-decreed atheism in the post-Soviet space. Yet although it had been prohibited for decades to practice one's beliefs, the various confessions had been able to maintain their ideological and regional differences. When the Soviet Union disintegrated, religion experienced a renaissance in Russia and the other Soviet successor states. In addition to the search for meaning, religion fostered identity in the process of national rebirth. In post-Soviet countries, religious belief proved the cornerstone of a return to traditional national values.

Russia's major religions include Orthodox Christianity, Islam, Judaism and Buddhism. The Russian Orthodox Church is by far the largest religious community. In the last 20 years, it has been able to significantly expand its social presence. The number of parishes rose from 6,893 in 1988 to 29,141 in 2008. At the end of the 1980s, there were five clerical colleges. By now, the Orthodox educational sector encompasses

87 institutions, and these still cannot accommodate the rush of applicants. The number of operated monasteries rose from 21 to 769.<sup>111</sup>

At the beginning of the 1990s, the Orthodox Church was not prepared to meet the challenges of its newly-won freedom. Many church representatives toyed with the idea of returning to a pre-revolutionary tradition, when Orthodoxy enjoyed the status of a state religion. The clergy did not trust emerging democracy. It was especially afraid of Western freedoms, such as the individual choice of religious belief as guaranteed in the liberal 1990 law on religion. But in 1997, the law was replaced by a new one, thanks to pressure by the Orthodox Church, explicitly favouring the four "traditional" confessions.<sup>112</sup>

#### More than a religious community

The Orthodox Church has by now come to play a fundamental role in society, which it does not, however, use to criticize the state or government. It sees itself, rather, as a spiritual mentor to the political elite. The role model for this symbiotic relationship is that between the Church and the state in the Byzantine Empire, from which Russia adopted Christianity.<sup>113</sup> There are still conflicts, however, when the Church tries to use the state for its own purposes. For example, it did not manage to legally establish two matters close to its heart: installing military clergy in the army and introducing mandatory Orthodox instruction in the schools.<sup>114</sup>

Nonetheless, state institutions and politicians try to rub elbows with Church dignitaries, which lends additional legitimacy. Furthermore, the Church's self-styled orthodoxy, presented as a specifically Russian form of Christianity, suits Vladimir Putin's nationalistic course: the state and the Church both reject pluralistic democracy. The only difference is that the Church rejects it more openly since it does not have to take into account foreign policy considerations. It rejects western democracy and universal human rights as irreconcilable with the Russian tradition of consensus and community as principles of social organization.

Sociological research confirms that the Russian Orthodox Church is more than simply a community of people with shared beliefs. In surveys, "Russian" and "orthodox" are increasingly used as synonyms. Accordingly, "orthodox" means "genuinely Russian" and protecting orthodoxy is deemed a national security matter. Belief is simply a sub-category in this system of orthodoxy. Whoever professes orthodoxy thereby emphasizes his or her place within a Russian tradition.<sup>115</sup> In a 2009 survey conducted by the Levada Center, an opinion research

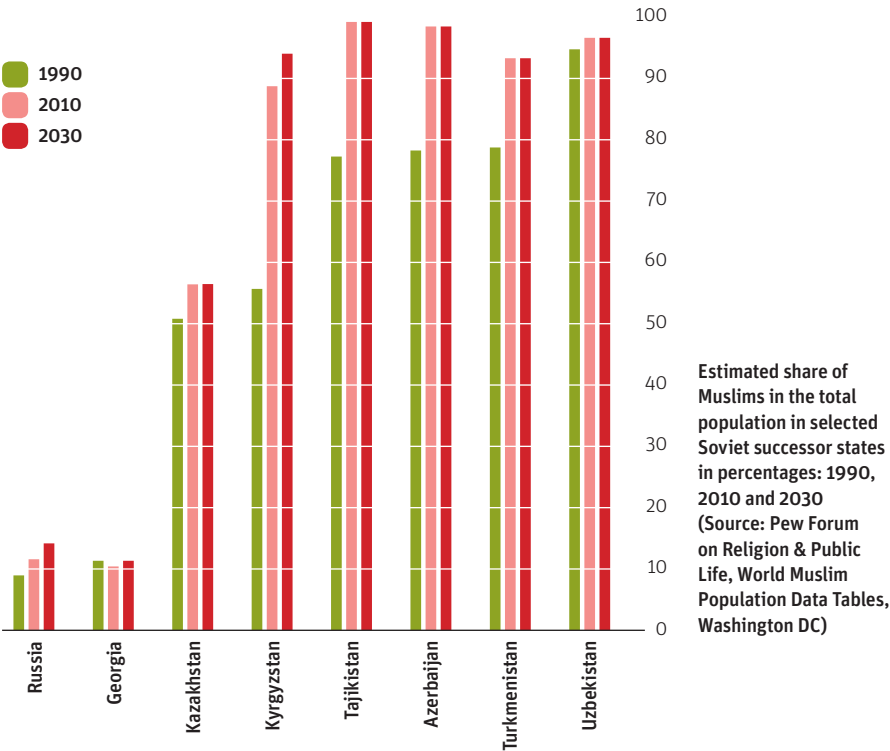
institute, 72 percent of the population deemed themselves orthodox while only 30 percent of Russians believe in God.<sup>116</sup> And only a fraction of believers, whose knowledge of the religious canon is generally superficial, participate in parish life.

The average age of church-goers has grown drastically younger, falling from 65 to 50. In the past, the most committed church-goers were uneducated “Babushkas”. In the meantime, they have been replaced by mostly female students, young professionals, teachers, civil servants and businesswomen between 40 and 55 years old. The historical irony is that this generation’s sympathy with and nostalgia for the Soviet era has turned the Soviet Union’s most important “non-Soviet institution” into a Church for the Soviet people.<sup>117</sup>

In Belarus and Ukraine, an orthodox religious renaissance has undergone a similar development. In the western regions of both countries, which belonged to Poland and Czechoslovakia until 1939 and were thus less “Sovietized”, the degree of religiosity is significantly greater among the Catholic population, however. In Caucasian countries, religion plays an important role in daily life but the population seldom practices. This is also true for Muslim Azerbaijan. In Armenia, the Apostolic Church is the de facto state church. Its primary responsibility is to legitimate military conflicts with its Muslim neighbour, Azerbaijan, over the Nagorno-Karabakh region.<sup>118</sup>

### Growing number of Muslims

Islam is Russia’s second-largest religion. It is not clear, however, how many Muslims live in the country. The 2002 census conjectured 14.5 million based on the ethnic make-up of the population. By now, the 15-million mark has most likely been surpassed. Representatives of the Islamic community think there are even more than 20 million Muslims in Russia because, since the demise of the Soviet Union, millions of people – especially from the Central Asian states of Tajikistan, Uzbekistan and Kyrgyzstan – have left for Russia, which is economically better off. The largest contingent of immigrants, at 1.5 million, hails from Azerbaijan. Whether the immigrants are devout Muslims or simply nationals of Islamic countries is not clear from the estimates.<sup>119</sup>



### Little change expected

After 1990, the number of Muslims in some Central Asian states and Azerbaijan grew significantly. One reason for this is that ethnic Russians emigrated. In Russia itself, the number of Muslims is increasing only slightly nor will it increase erratically in the future. The existing growth can be attributed to higher numbers of children by Muslim women, a more youthful population structure and immigration of Muslims from neighbouring countries to the south. About 80 percent of Russia’s Muslims settle in the North Caucasus or on the Volga, especially in the republics of Dagestan, Bashkortostan, Tatarstan and Chechnya.<sup>120</sup>

Russia's traditional Muslim population is settled in Tatarstan (5.5 million), Bashkortostan (1.6 million) and in the mountain region of the North Caucasus (seven million).<sup>121</sup> These peoples did not immigrate to the Russian Federation; Russia incorporated them in the wake of colonial expansion. Today, they can, like ethnic Russians, rightly see Russia as their historical homeland. In contrast to Tatarstan, however, which is closely linked to the heart of Russia, the North Caucasus leads a marginal existence. More and more Caucasians are fleeing from the underdeveloped region's economic problems. They are not, however, welcomed with open arms in Russia's large cities: xenophobia in Russia has reached dangerous proportions and it sporadically explodes into pogroms. Right-wing extremists and racists can rely on the tacit acceptance of the public at large.

### **Purists are gaining influence**

Since the first war in Chechnya broke out in the mid-1990s, Islam has been equated in the Russian mind with extremism and separatism. Both parties have contributed in their own ways. Step by step, the separatists have turned the war of liberation into a jihad, while Moscow defines the war as its contribution to the global fight against Islamic terror, not least to counter international criticism of crimes against the civilian population. A more nuanced encounter with the Islamic renaissance has

not taken place. Authorities deem all kinds of Islamic re-birth "militant and steered from the outside" if they do not correspond to traditional Soviet-style Islam, grouping them under the incendiary blanket term of "Wahhabism".

Even dignitaries of the official Muslim clergy committed to traditional Islam and keen to get along with the Kremlin use this term. This is not surprising, since criticism by the purist reformers is directed primarily against the spiritual nomenclature of the old school. Before the Iron Curtain fell, the population had developed a specific form of religious practice in order to survive Soviet rule. The religion and customs of the mountain peoples were combined in ritual practices. Mullahs and Imams possessed only rudimentary religious knowledge and violated, as far as purists were concerned, the true teachings of Islamic ritual. The religious conflict masked, however, a generational conflict: young people especially joined oppositional religious groups in order to protest rigid policies, state corruption, nepotism and the lack of social prospects.

Wahhabism is guided by the pure teachings of the prophets and can be traced back to Ibn al-Wahhab on the 18<sup>th</sup> century Arabian Peninsula. But the term "Salafism" would better benefit the purism of Russian Islam. This also preaches an uncompromising purism without necessarily calling for militant struggle. The state made a tragic mistake in the early phase of these movements by failing to distinguish between the various forms of Islam: the religiously active Muslims, the politically active but peaceful Islamists and the militant "Jihadists".<sup>122</sup> Instead, security forces indiscriminately fought all believers whose faith did not conform to Soviet Islam, promoting rather than quelling radicalization.

Today, there is virtually no Islamic opposition willing to enter a dialogue and more and more Muslims accept militant underground activities.\*

Policies attempt to encounter purist pressure by making ever more concessions to religion and its dignitaries in worldly matters. This has in some places essentially led to the abolition of the separation of church and state, as can be increasingly observed in Dagestan and Chechnya. Now that faith has found its way into political and social life, the state and society are facing de-modernization and retreating to pre-modern patterns of behaviour.<sup>124</sup> Russia's south has become a foreign country-within-the-country. In the post-Soviet world, both the Caucasus and Central Asian states have been affected by the mobilization of Islamic forces. Measured by the number of terrorist acts, however, there is much greater potential for violence in the North Caucasus.<sup>125</sup>

\* In 1999, Dagestan's population still supported the Russian security forces' struggle against Islamists, with a majority rejecting the founding of a pan-Caucasian emirate.<sup>123</sup>



## Environment

### Sins of the past, dangers in the future

Russia is rich in unspoiled nature, endless forests and majestic rivers which meander northward across the Siberian tundra. The vast, sparsely populated regions offer a habitat for bears, rare snow leopards, the Amur tiger and the world's only fresh-water seal, which lives in Lake Baikal. 22 percent of all the world's forests are located in Russia; around 47 percent of its territory is covered by forests.<sup>126</sup> The Russians' close relationship to nature is the subject of countless songs and poems, and even the prime minister Vladimir Putin likes to present himself as a rugged man of nature. Yet in reality, Russians are rather rough-handed with the environment and environmental protection is a matter of low priority.

During the Soviet regime, humans and nature alike were regarded as mere resources for ensuring the victory of communism over capitalism. Huge production facilities, pre-planned industrial cities and gigantic combines were built in the wilderness, pouring millions of tonnes of nitrogen oxides, sulphur dioxide, carbon dioxide and heavy metals into the air each year.<sup>127</sup> Under the government's direction, rivers were diverted and contaminated and 969 atomic bombs were detonated for testing purposes.<sup>128</sup>

Soviet-era contaminants, produced in large part by the military-industrial complex, continue to adversely affect the environment today. As the nuclear weapons race drew to a close at the end of the Brezhnev era, the Soviets had tens of thousands of operational nuclear warheads – enough to annihilate life on the planet many times over. Hundreds of thousands of people were employed in secret nuclear programmes in places not found on any map (so-called SATO, the Russian abbreviation for “closed administrative territorial units”). These cities were frequently named after faraway places and had only one P.O. box number. They were given real names in the 1990s. The most important nuclear weapons laboratory, for example, was in Arzamas-16 (today's Sarov), 186 kilometres away from Nizhny Novgorod and 80 kilometres away from Arzamas itself. A large bomb factory was located in Sverdlovsk-45 (Lesnoy) in the Ural Mountains near Yekaterinburg, and one of the key sites of plutonium production could be found in the Siberian city of Krasnoyarsk-26 (Zhelesnogorsk). To this day, the environmental pollution in all of these cities remains high.

In Tomsk-7 (Seversk), highly active waste material was simply buried underground and bulldozed over. The Soviet military disposed of atomic reactors in submarines by sinking them off the coast of Novaya Zemlya and in the Sea of Japan. In 1957, a tank containing 300,000 litres of waste exploded in a plutonium facility in Chelyabinsk-40 (Ozyorsk), releasing millions of radioactive particles into the air – more than were

released by the Chernobyl accident. Later, engineers diverted an estimated 76 million cubic metres of highly radioactive wastewater into the Techa River, which is still contaminated today.<sup>129</sup>

The Soviets – and to some degree the Russian Federation as well – produced approximately 145 tonnes of weapons-grade plutonium. Out of this total, 17 tonnes have been used in nuclear testing, disposed of, or sunk to the ocean floor inside nuclear-powered submarines.<sup>130</sup> One of the most intensely discussed matters of international security involves how the remaining 128 tonnes and the masses of radioactive waste from civilian and military nuclear facilities can be safely stored and safeguarded from terrorists, for example. Even small amounts of highly radioactive waste would suffice to make a so-called “dirty bomb”.<sup>131</sup>

The distrustful Soviet military preferred to have most of their bomb-grade material produced in the Russian Soviet Socialist Republic, but carried out their nuclear testing in the neighbouring republics or along Russia's outlying borders. In 1961, the military detonated the most powerful nuclear device on the island of Novaya Zemlya – an explosion almost 4,000 times more powerful than the bomb that destroyed Hiroshima. Around 120 atmospheric nuclear

tests were carried out at the test site in the eastern Kazakh city of Semipalatinsk-21, and the military repeatedly failed to give ample warning to the farmers and shepherds who lived there. The effects are evident today; the lifespan of residents in the surrounding villages is almost ten years less than the average in Kazakhstan.<sup>132</sup>

Because of the long half-life of radioactive fissile materials, the toxic waste of the Soviet era is still very dangerous today. “Traditional” environmental pollution, on

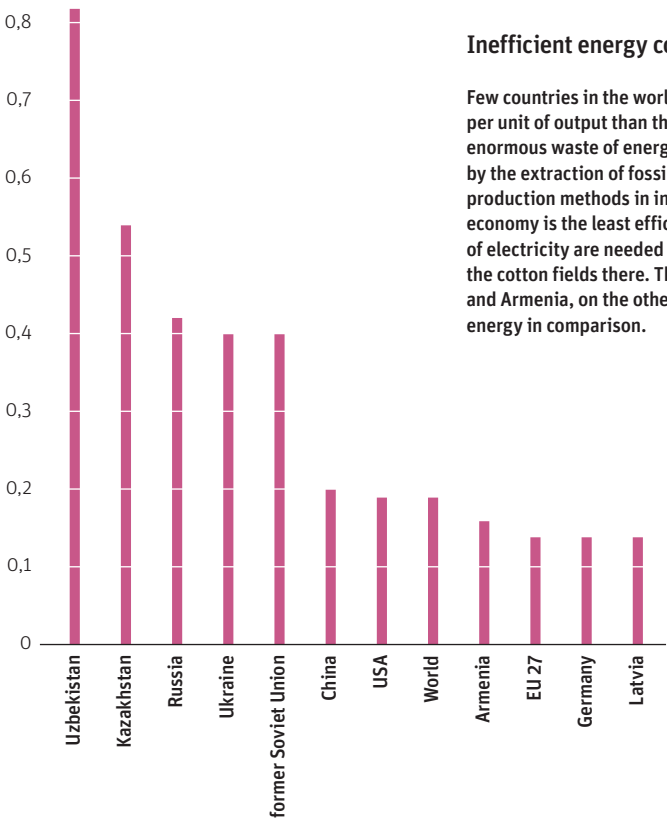
the other hand, is relatively easy to remove. Many of the old industrial factories have been closed down because they were no longer profitable or were modernized. Compared to 1990, the amount of unprocessed industrial and municipal waste water that ends up in streams and rivers has fallen by almost 40 percent and emissions of airborne pollutants have decreased by 30 percent.<sup>133</sup> But as living standards increase, Russians are producing more garbage than ever before. Air pollution has worsened with increasing volumes of traffic in cities. In recent years, the nation’s energy consumption has also surged. In terms of population – and certainly in terms of GDP – Russia continues to produce far higher emissions of sulphur

dioxide and heavy metals than comparable industrial countries. According to the Human Development Report of the United Nations, “despite modernization attempts, the last few years have seen Russia becoming increasingly resource export-oriented and environmentally unfriendly.”<sup>134</sup>

Until Gorbachev came to power, information about environmental pollution was rarely publicized in the Soviet Union. In its first environmental report in 1989, the state committee for environmental protection admitted that 290 areas were impacted by an “unfavourable environmental situation.” These areas comprised 3.7 million square kilometres or 16 percent of the entire land area of the Soviet Union.<sup>135</sup> Today, 136 cities, home to 56 million inhabitants, continue to register high levels of air pollution, thirty of which suffer from “very high” levels of air pollution.<sup>136</sup>

The worst environmental conditions can be found in areas where traditional coal- and chemical-producing industries and heavy industries are situated, such as the Kuznetsk Basin, one of the 13 most polluted regions in Russia, over which hangs a toxic cocktail of heavy metals, nitrogen oxides, sulphur dioxide, halogen-containing compounds and phenols. According to data released by the Blacksmith Institute in New York in 2007, four of the top ten most heavily polluted regions on earth can be found in the territory of the former Soviet Union: the former chemical weapons production centre of Dzerzhinsk in Nizhny Novgorod Oblast, the petrochemical city of Sumgait right outside the Azerbaijani capital of Baku, the North Siberian city of Norilsk, which is off-limits to foreigners and where the largest nickel smelting works in the world have decimated vast swathes of vegetation, and the region surrounding the destroyed Ukrainian reactor in Chernobyl.<sup>137</sup>

Consumed tonnes of oil equivalent for a GDP of 1,000 US dollars (2000) based on purchasing power parity



Inefficient energy consumption

Few countries in the world consume more energy per unit of output than the post-Soviet states. The enormous waste of energy is primarily caused by the extraction of fossil fuels and antiquated production methods in industry. Uzbekistan’s economy is the least efficient, as huge amounts of electricity are needed to artificially irrigate the cotton fields there. The economies of Latvia and Armenia, on the other hand, consume less energy in comparison.

Energy intensity in different countries, 2008  
(Source: International Energy Agency, Online Database, Paris)

One sign of just how far Russia's industry is lagging behind is its high energy needs for production; Russia requires two to three times more energy to achieve the same GDP than Germany or Sweden. Ukraine's use of energy is comparably inefficient.<sup>138</sup> Even though Russia ranks ninth in terms of population, it is the third-largest carbon dioxide emitter after the USA and China, and the second largest emitter of methane, a major contributor to the greenhouse effect.<sup>139</sup> The enormous emissions of methane are mainly due to the production of natural gas and leaking pipelines. In fact, the oil and gas pipeline infrastructure is widely regarded as outdated and corroded. Devastating accidents occur on a regular basis, such as the one near the northern Russian city of Usinsk. The 20-year-old pipeline had been losing oil since February 1994 and engineers had tried collecting it behind an artificial dike. But when the dike burst in October of the same year, 100,000 tonnes of crude oil gushed across the Siberian tundra and into the Kolva and Pechora Rivers, where the oil is now degrading naturally, but extremely slowly due to the low temperatures. Pipeline leakages account for the loss of some twenty million tonnes of oil each year in Russia – about four percent of total production.<sup>140</sup>

## Contested impact of climate change

Despite all this, climate protection hardly plays a role in the country. Russia did ratify the Kyoto Protocol – albeit with a seven-year delay – and announced that after 2020 it would reduce emissions of greenhouse gases to ten to 15 percent less than the amount emitted in 1990. However, because so many energy-wasting industrial facilities shut their doors during the course of the country's free-market transformation in the 1990s, Russia's emissions are actually lower today than those called for by the Kyoto Protocol. In the coming years, Russia could even increase its emissions and still claim to be a "climate protector". A far more ambitious goal will be to reduce energy intensity by 40 percent until 2020.<sup>141</sup>

Environmental policy has also taken a backseat in Russia for a long time because many Russian scientists see an advantage to global warming. According to climate models, temperatures in the northern latitudes are set to rise much more than in the equatorial latitudes. Melting sea ice and less snow cover will lay bare more of the planet's dark surface, which in turn will absorb more of the sun's heat and accelerate global warming. For Siberia this could mean a temperature increase of up to four degrees centigrade by 2030.<sup>142</sup>

This would allow the forests and agriculturally viable farmland to extend 200 to 1,000 kilometres northward.<sup>143</sup> Heating costs would plummet, the north-eastern passage would be free of ice for merchant ships, and it would be easier to tap new fossil fuel resources in the far north and under the Arctic Sea. On the other hand, the fertile chernozem regions and steppes in the south would suffer from

more severe summer droughts. Furthermore, the permafrost, which covers 60 percent of the Russian territory, is beginning to thaw out as a result of climate change.<sup>144</sup> A large portion of Russia's 200,000 kilometres of gas and oil pipelines run over or through the permafrost which goes down 1,500 metres in some places. Buildings, roads, railways, high-tension wires, airports, nuclear power plants, winding towers and gigantic toxic and nuclear waste dumps have been built atop or anchored in this solid ground. This entire infrastructure would begin to destabilize if the permafrost thawed. In addition, the thawing moors and swamps would release enormous amounts of carbon dioxide and methane, propelling the greenhouse effect even further.

Russians were given a taste of the volatile weather they can look forward to during the scorching summer of 2010. Although forest and peat fires are relatively typical for that season, they spread out of control and developed into 700 separate large fires. The flames consumed 70,000 square kilometres of woodland – an area the size of Bavaria – and because the dry fields caught fire after the long drought, the country reported a 40-percent shortfall in the grain harvest for the first ten months of the year.<sup>145</sup> Moscow and other cities were engulfed in poisonous clouds of smog. According to recent estimates, the fires were responsible for a one percent drop in Russia's economic growth – equivalent to a loss of some eleven billion euros.<sup>146</sup> And the carbon dioxide released by the fires has contributed even further to global warming.





## Cities Planned life

The global financial crisis of 2008 hit Russia harder than other emerging economies. Dominated by natural resources, the economy proved to be not only especially vulnerable; the crisis also revealed that the boom years had not been sufficiently used to place the economy on a broader foundation.

The mono-cities, or monogoroda, were the first to feel the painful effects. These are cities which are dependent upon the production of a single combine or several large companies within one industrial sector. Most mono-cities are relicts of the planned economy, which created factories and workers' settlements all over the country as it underwent rapid industrialization. These centres were, above all, production sites which only met the needs and desires of their inhabitants to a limited extent.

According to the official definition, a place is a mono-city when more than one-fourth of the working population is employed by a single company or in a single industrial sector or when at least half of industrial production is rooted in a single branch of the economy. A company is deemed "city-forming" when 50 percent of the inhabitants – including employees – are dependent upon the company's social and communal services.<sup>147</sup> By now, Russian experts define mono-cities as a remnant of industrialization whose days are counted: "Mono-cities are settlements whose inhabitants and organizations are incapable of compensating for the risks of external economic influences and of ensuring the location's sustained economic development."<sup>148</sup>

The Russian government's crisis programme of December 2010 pinpoints 335 mono-cities.<sup>149</sup> In total, there are far more settlements with mono structures. Official statistics exclude places maintained by the military as well as closed settlements deemed "top secret". Of the Russian Federation's 1,090 cities, a total of about 450 fulfil the criteria for a mono-city. 25 million people live in these, or about one-sixth of the population. Prior to the crisis, mono-cities generated up to 40 percent of GDP.<sup>150</sup>

The gas and oil producing mono-cities in Western Siberia survived the slump without any notable losses. Hit hardest were those places which live from mechanical engineering or the automobile industry, although the chemical, wood pulp and construction material industries also suffered heavily. In 2010, a federal programme provided the most adversely affected cities with about 500 million euros in emergency aid. Receivers, which initially numbered 27, rose to 35 and should rise to at least 50 in 2011.<sup>151</sup> The automobile city of Tolyatti, where the Lada is built, was the first to receive a package. With more than 700,000 inhabitants, this is Russia's best-known and largest mono-city. The centre of lorry production in Naberezhnye Chelny also received help. Svetlogore in the Far East, which only has 1,900 inhabitants but where the important tungsten metal is produced, also received a subsidy.

The investment programme has high aims: planners assume that every state rouble will bring in ten roubles from private investors. But the commission bemoans a lack of innovation projects worth promoting. For example, a third of the larger cities were not able to make promising proposals. Furthermore, 76 percent of the mono-cities are small communities lacking the funds to even set up proposals.<sup>152</sup>

### How much "city" does Russia need?

Reconstruction poses enormous difficulties for Russia. Since the planned economy did not include market-oriented calculations when cities were founded, transportation costs and climate conditions were taken into as little consideration as the fact that many places were geographically untenable. Even today there are many cities which cannot be reached by land at all, or only seasonally.

Cities were founded, however, with other goals than in the West, even during the Czarist era. They did not emerge as a conglomeration of free individuals; they served the political leadership as administrative centres. While Europeans believed that "town air makes you free," Russian cities were veritable strongholds of bondage. The Soviet Union remained true to this tradition.

World-wide, urban development follows a dynamic described by Zipf's Law: according to this, a country's largest city has about twice as many inhabitants as its second-largest city, three times as many as the third-largest, and so on. This law does not apply to Russia:



cities such as Novosibirsk, Novgorod, Yekaterinburg, Samara and Omsk all have only about one million inhabitants. These second-ranking cities are frequently too small to become engines of innovation. There are no urban centres between 1.5 and four million inhabitants which could do so.

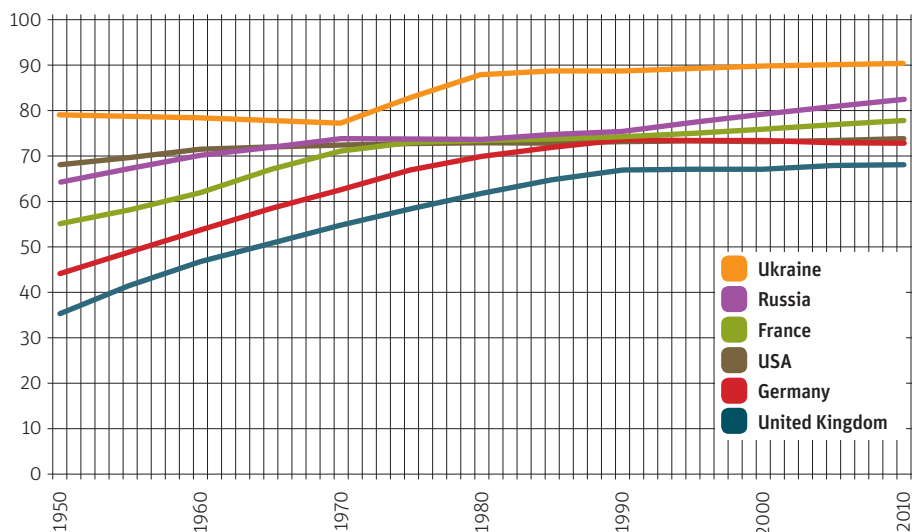
Previous attempts to resettle workers from the north and other economically weak regions have failed over and over due to the housing market and underdeveloped loan systems. Whoever wants to resettle from this kind of a region to a prospering one is seldom in a position to finance the move. Generally, selling property does not cover housing in the new location. And the Russian population is not considered mobile. In times of crisis, the willingness to move declines even more since many people grow food in their own gardens. If migration takes place, then it is owing to the young. Vorkuta, for example, a city beyond the Arctic Circle, has lost more than a third of its inhabitants since 1989. Since the older generation remained behind, the city has hardly been able to save on its social infrastructure.<sup>153</sup>

The large cities of Moscow and St. Petersburg have proven more adaptable in the midst of crisis than the cities in other regions, despite all the difficulties they have faced. On the basis of this knowledge, the government has apparently considered permanently altering the face of Russia. An as-yet unpublished proposal suggests long-term resettlement of the population in 20 centres.<sup>154</sup> Promoting small cities (up to 100,000 inhabitants) has been deemed futile. Instead, resources for investment and modernization should be pooled. The foundation of the new economy is a three-million agglomeration: “An infrastructure of knowledge, a new model of

urban administration and the concept of a creative city can emerge on the basis of intellectual resources.” The prerequisite for this is an open migration policy. Without such a policy, planners predict population losses by 2030 for cities such as Omsk, Kazan, Ufa, Chelyabinsk, Rostov and Perm. Only Moscow, St. Petersburg, Novosibirsk, Nizhny Novgorod, Yekaterinburg and Samara would continue to grow.<sup>155</sup> The proposal distances itself from the Soviet belief in uniform settlement of the territory. Whether there are resources and the political will to realize such a major project remains doubtful, however. Experts are already warning about excessive bureaucratic planning and have reminded planners that successful agglomerations emerge naturally.

## Urbanization Russian-style

In the 20<sup>th</sup> century, Soviet leaders converted the former peasant's state into an industrial giant. More and more people moved to the cities throughout the period of industrialization, which had already begun even prior to the Second World War. The cities were often created for the sake of production only and are still dependent upon a single enterprise – so called mono-cities. Today, the share of the urban population in Russia and Ukraine is only marginally smaller than in Germany or France; but many live in small cities of little more than 10,000 inhabitants. And these are dispersed throughout the vast territory. Agglomerations with several million people and which could become engines of growth are mostly absent in the settlement pattern.



Percentage of population living in cities in selected countries, 1950 to 2010

(Source: United Nations, World Urbanization Prospects: The 2007 Revision Population Database, New York)

How should Russia protect its 20,000 kilometre border in the future? Which domestic dangers will the Soviet Union's most powerful successor state have to face? These and other security policy questions are increasingly being asked from a demographic perspective.

A simple arithmetical example makes the background clear: Starting in 2016, a million men are supposed to serve in the armed forces, most of them as conscripts. In 2008, about a million young men were 18 years old – conscription age. In 2017, however, this number will have decreased to about 630,000. After compulsory military service was reduced to twelve months in 2008, the army needs about 600,000 recruits annually to fill its ranks. This will also lead to shortages if all conscripts, regardless of their fitness for duty, are drafted, since the conscription rate has so far been a mere 25 percent. Many potential soldiers postpone service by pursuing higher education. Others are eliminated due to poor health – far more than are actually not fit for service. And whoever can afford to buys his way out of military service to avoid the notorious chicanery and abuse by older soldiers or superiors.

The typical conscript hails from the lower class, is poorly educated and often addicted to drugs or alcohol.<sup>156</sup> Of the 305,000 men who underwent medical examinations in spring of 2009, 100,000 had previously served jail terms or been on probation according to the Veterans Commission of the Public Chamber of the Russian Federation.<sup>157</sup> Even if this figure is exaggerated, it will only be possible in the future to find enough and sufficiently qualified recruits if the Russian population's general health improves and the observance of human rights within the troops is effectively supervised.

### Hard power vs. soft power

The sorry state of the conventional armed forces has been a perennial topic in Russia for 20 years. Numerous reforms have been undertaken but most of these have failed in the face of military opposition and a lack of resources. The army never managed the leap from the industrial to the information age. The share of modern weapons was but ten percent in 2009, according to Defence Minister Anatoly Serdyukov. By 2020, these should increase to 70 percent.<sup>158</sup> Among other things, the loss of Russian soldiers' lives in the ultimately victorious war with Georgia in 2008 inspired the Kremlin to launch a new reform. Experts consider this the most credible reform so far. Its core: today's army, which can rely on a large number of reservists, is to be replaced by an operational army with small units which can be mobilized immediately. Russia wants to deploy these to respond more flexibly to local conflicts. This appears more urgent than ever before, particularly in Russia's restive south.<sup>159</sup>

Moscow, influenced by the 19<sup>th</sup> century paradigm of the nation state, has little understanding for the fact that the qualities of a major power are no longer measured solely in terms of their military strength and territorial size. Territory and military power have not, of course, become superfluous; but in comparison to “soft power” qualities, they are becoming less significant: today, modern countries increasingly measure their international influence in terms of technological innovation, well-educated human capital, cultural resources and a modern set of values.

Besides, the question needs to be asked: to what extent is Russia's possibly endangered position as a superpower its most urgent foreign security problem? Who would actually attack Russia? Moscow considered the USA, NATO and China the main risks, at least until the beginning of the Medvedev era. The Military Doctrine through 2020 breeds hope for a paradigmatic shift: Washington and Brussels were mentioned as “military dangers”, but not as “military threats”; consequently, there is no “realistic possibility of an armed conflict.”<sup>160</sup>

The country's foreign and security policy elite has taken a similar view: in a survey by the Moscow office of the Friedrich-Ebert-Stiftung in cooperation with the Sociological Institute of the Russian Academy of Sciences, about two-thirds of those surveyed – which included experts, opinion-makers and high-ranking civil servants – found the

level of national security unsatisfactory. Other countries and the military only play, however, a subordinate role: international tensions ranked 28 among 70 possible threats, China's growing economic and military power ranked 30 and a military attack by other countries only ranked 62. By contrast, primarily internal threats such as governmental corruption, a backwards economy and terrorism were ranked in the top ten. Demographic shrinkage and the population's poor health were also among the top concerns.<sup>161</sup>

Experts definitely see the demographic crisis as a security threat for Russia. It is questionable, however, whether the purely numerical decline in potential conscripts is the root of all evil. In the future, the capacities and educational levels of the young will be of much greater importance. They will determine Russia's economic potential and, indirectly, the ability to modernize the military and fortify the country's global political influence.

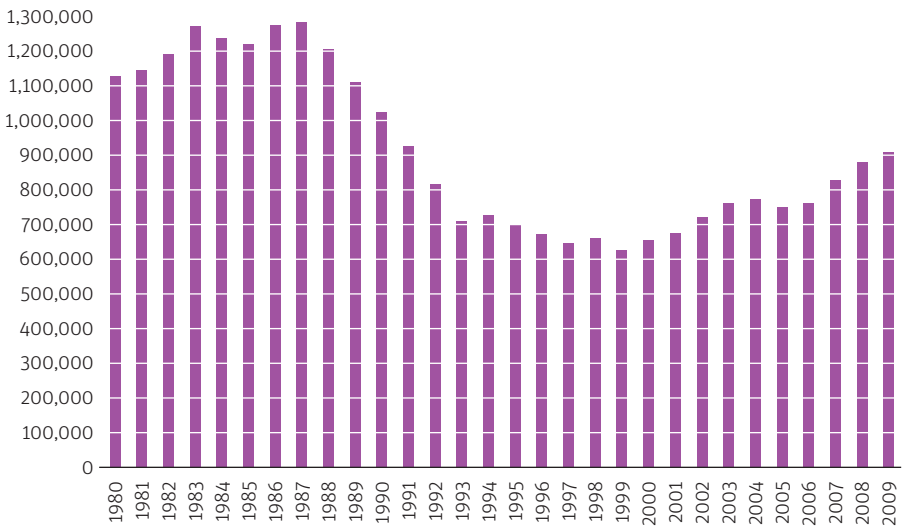
In the eyes of many Russians, the increasing number of non-Russian ethnicities also constitutes a growing danger. Confrontations in the Caucasus and repeated attacks in the country's centre have led to growing xenophobia and fear of terror among the Russian population. Many people are already projecting their anxieties onto the armed forces and have warned that young non-Russian men may soon constitute the majority of recruits. Military operations in regions plagued by ethnic tensions, such as Chechnya, could become harder and harder to conduct.<sup>162</sup> There is no doubt that society's increasing ethnic polarization is potentially very dangerous since deepening mutual mistrust can only be reversed gradually.

Russian security policy still has a hard time negotiating the gap between its foreign leadership ambitions and its domestic challenges. This is illustrated by the "National Security Strategy to 2020". It makes clear that Russia must aim to regain the status of a world power and, with regard to strategic weapons, to keep up with the United States. At the same time, it acknowledges that stable economic development and a high standard of living for its citizens constitute the basis of security. The strategy even contains sections on science, culture, health and a responsible relationship to the environment.<sup>163</sup>

These considerations arose against the backdrop of the global economic crisis, which is why they emphasize economic factors. Nonetheless, the strategy is another step away from Cold War security policy, which was based on nuclear armament. Of course, nuclear arms constitute an effective threat in international conflicts but they are of little practical use in ensuring the security of one's own people, particularly where domestic threats are concerned.

**Fewer and fewer male newborns**

Following a temporary high during the Gorbachov era in the mid-1990s, the number of male newborns in Russia halved within twelve years. The number of potential conscripts has declined accordingly in the last few years. Of the 626,000 boys born in 1999, only a fraction are likely to be drafted in 2017. From the standpoint of today, the majority (of those who even survive until then) will either buy their way out of military service or will not even report for service for health reasons. In recent years, the number of births has again risen slightly, but this will decline again when the smaller cohorts of the 1990s reach childbearing age.



Number of male newborns in Russia, 1980 to 2009  
(Source: Rosstat, Demograficheski Yezhegodnik Rossii – 2010 g., Moscow)

# EUROPEAN RUSSIA

**CENTRAL** Federal District

**NORTHWESTERN** Federal District

**SOUTHERN** Federal District

**NORTH CAUCASIAN** Federal District

**VOLGA** Federal District

Population development in percentages

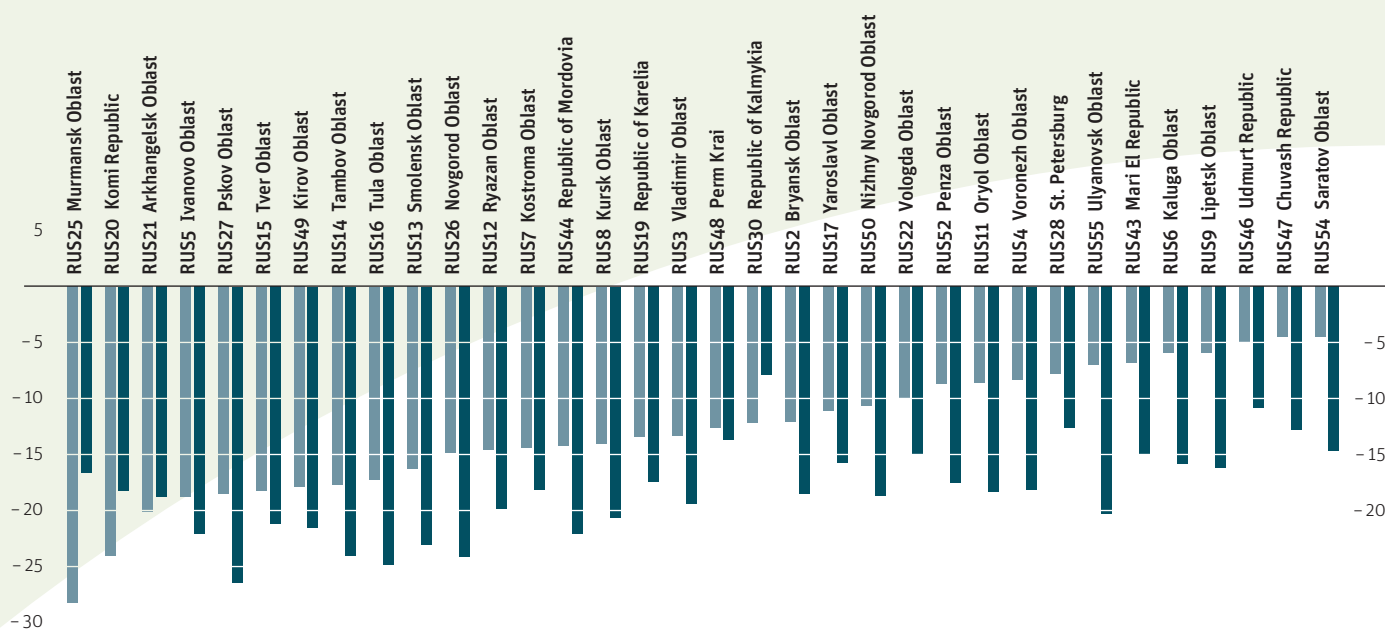
1989 (census) until the end of 2009

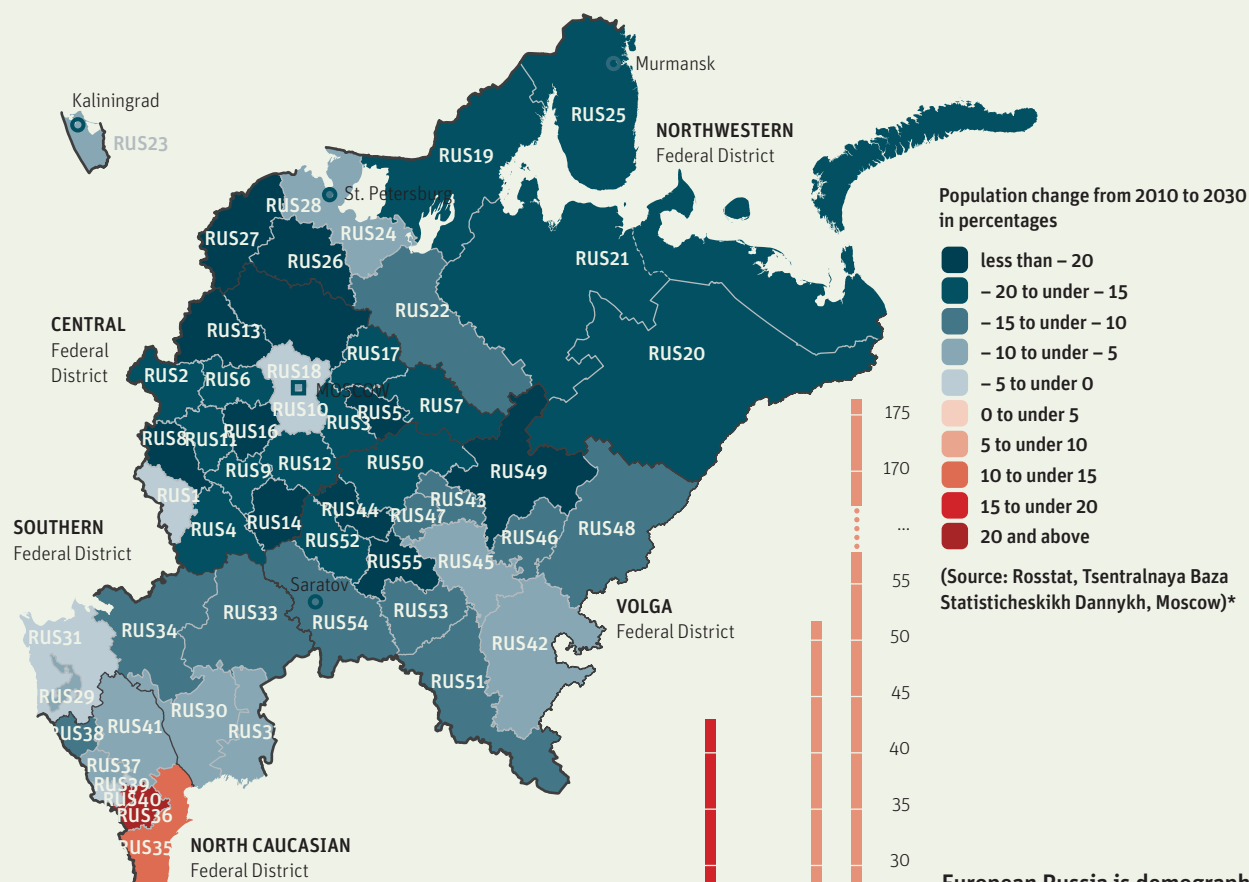
Beginning of 2010 to the end of 2030

(Source: author's calculations based on: Rosstat, Tsentralnaya Baza Statisticheskikh Danykh; Demoscope Weekly. Vsesoyuznaya Perepis Naseleniya 1989 Goda, Moscow)

In the European part of Russia, the country's historical core spreading to the Urals, 73 percent of all Russians inhabit just slightly more than 20 percent of the entire country's area. The region's undisputed centre is Moscow, whose economic strength attracts tens of thousands of immigrants year for year. The capital's surrounding regions also profit

from this migration, although there are many weak industrial regions in the immediate vicinity of Moscow beset by a slew of economic and social problems. The region's great challenges lie in the health sector because, among other things, the population here is ageing more quickly than elsewhere in Russia. Due to natural population loss, the area will have to rely more and more on immigration. Further from Moscow, in the south and the east, things look different since the number of children in these regions is higher. Many non-ethnic Russians live here, in the republics of Tatarstan, Bashkortostan and Mari El, for example, and particularly in the North Caucasus, which includes the crisis-ridden regions of Chechnya, Ingushetia and Dagestan. These areas first came under Russian control at the end of the 19<sup>th</sup> century and some of them have been fighting for independence since the collapse of the Soviet Union. Two wars in Chechnya have caused lasting damage to the breakaway republic's infrastructure while growing Islamic extremism and Russia's fight against terrorism continue to trouble the region.





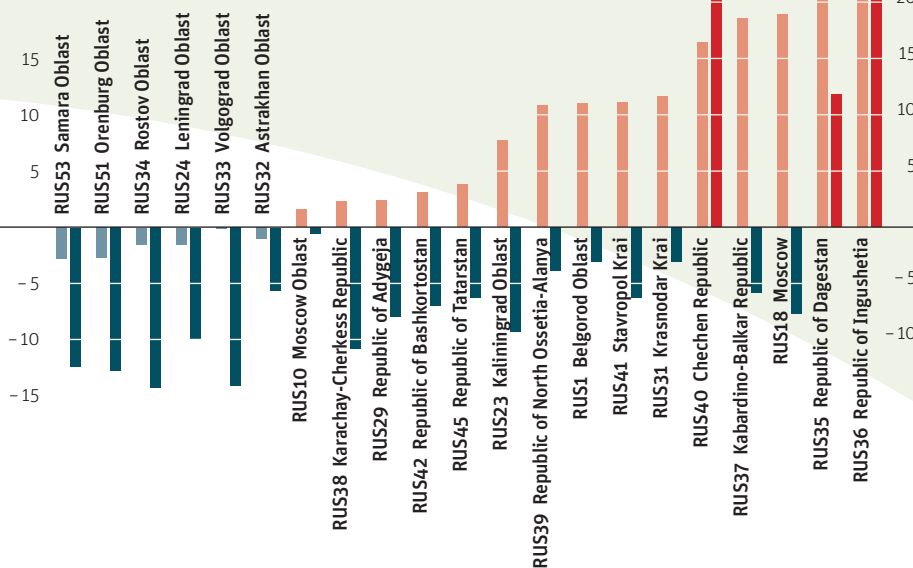
Population change from 2010 to 2030 in percentages

- less than - 20
- 20 to under - 15
- 15 to under - 10
- 10 to under - 5
- 5 to under 0
- 0 to under 5
- 5 to under 10
- 10 to under 15
- 15 to under 20
- 20 and above

(Source: Rosstat, Tsentrlnaya Baza Statisticheskikh Danykh, Moscow)\*

## European Russia is demographically divided

In Northwest and Central Russia as well as in vast parts of the Volga region, population numbers have been dwindling for years. Steadily low numbers of children and the advanced ageing of the population mean that this trend will only become more pronounced. In contrast, in the south of European Russia, meaning in the North Caucasus, where patriarchal family structures ensure high numbers of children and religion still plays a significant role, the population is growing.



\* Population projections are based on the low variant of Russian population calculations since these most closely correspond to the United Nations' projections used for all other countries in other parts of this study.

# CENTRAL Federal District

Population in 2010	37.12 million
Population in 2030 (projection)	32.62 million
Population/km <sup>2</sup> of land in 2010	57
Total fertility rate in 2005-2010	1.42
Life expectancy at birth in 2005-2010	69.4
Annual net migration 2005-2010	159,763
Mean age in 2010	41.0



(Source: see page 139)

## Magnetic Moscow

Towards the end of the 1980s, Moscow’s authorities registered 300,000 private cars. This means that in a population of about 8.7 million, one in 30 citizens had a car. Lucky automobile owners could race at high speed through the city’s wide boulevards. Today, more than four million car owners move daily at a snail’s pace to get to work through the very same roads.<sup>164</sup>

It is not only the proliferation of the private automobile which attests to Moscow’s boom. Moscow’s GDP is larger than in all other 17 regions of the Central Federal District together. This is also true of the city’s budget.<sup>165</sup> Over half of the country’s banks had their headquarters in the city in 2007.<sup>166</sup> And almost half of all Moscow’s employees have a university degree, which is more than in London.<sup>167</sup> Russia’s goal of having an economy based on knowledge and modern services seems to have taken root here.

To the same extent that Moscow has become a centre for multinational corporations, it now also attracts hundreds of thousands of immigrants annually. Whether they hail from other former Soviet republics, China, Vietnam or African countries, people stream into the city from all over the world. In the last 20 years, the population has grown by about two million people to far over ten million. And then there are up to three million unregistered immigrants.<sup>168</sup>

Natives and newcomers alike find a mix of Soviet relicts and the blossoms of global capitalism in today’s Moscow. Bright billboards on gray, pre-fabricated apartment blocks celebrate technology’s newest achievements. In the tiny kiosks of train stations, mobile phones, digital watches and jewellery seduce the masses of stressed commuters. And high-end limousines and cross-country vehicles roar along the enormous arterial motorways. The transformation from a planned to a market economy has generated wealth and well-being for many, but it has also caused a lot of problems.

One of Moscow’s biggest headaches is its infrastructure. The capital’s road system is hopelessly congested and parking spaces are in short supply. Cars dominate the city landscape so much that you do not even notice the centre’s few green spaces. Whoever wants to escape the stream of cars by taking the Metro has to face chronically overfilled trains despite the fact that they run every 40 seconds. Accommodation is not only notoriously insufficient; it is also unaffordable for many. At the beginning of 2008, flats cost an average of about 3,000 euros per square metre.<sup>169</sup> In Berlin during this period, buyers hardly paid more than 1,000 euros.<sup>170</sup> No wonder a torrent of commuters from the surrounding areas flood into the city every morning. Over a million of those employed in Moscow prefer the significantly cheaper housing outside the city and take the commute for granted.<sup>171</sup>

### The open closed city

In 1920, only a million people lived in Moscow, which had been decimated by civil war and the First World War. As the newly-founded Soviet Union's capital and industrial centre, Moscow nonetheless tantalized people from every part of the Union. The population had already tripled by 1930; the problems caused by such an explosion were not far behind.<sup>172</sup> Additionally, starvation in the following decade encouraged the burgeoning crisis in housing and supplies: hundreds of thousands fled to the capital from rural areas in search of food, which the government rigorously delivered to urban centres.

In order to curb rampant rural flight, the Soviet leaders introduced a domestic passport in 1932 intended to regulate access to large cities. It was only possible to enter a city with a propiska, a stamp permitting its receiver to live and work in a specific place. This new system ensured that every Soviet citizen had permanent accommodation, but people could only move in extenuating circumstances. The only way to get into a city like Moscow was to rely on family relations, job offers or voluntary exchanges with other citizens.

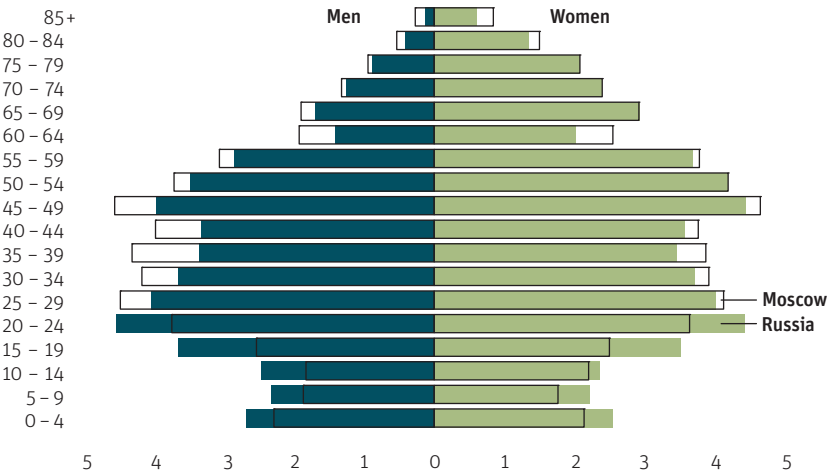
The domestic passport, however, was not able to stem the flow of migrants. Whoever really wanted to make it to Moscow did. Many went underground and sought informal employment, while others acquired illegal passports to gain a foothold in the regular labour market. Still others entered sham

marriages with city inhabitants. Up until the beginning of the Second World War, rapid industrialization attracted another million people. Only about a few hundred thousand were needed to reach the declared ceiling of five million inhabitants.<sup>173</sup>

After the war, which had thinned out Moscow's population to 2.5 million, there were more immigrants. In the early 1970s, the city broke the seven-million record, rendering the Soviet planners' goal, which had been upwardly adjusted, obsolete.<sup>174</sup> In order to curb such rapid growth, Soviet planners began to relocate industries outside the city. The target was only realized, however, in 40 of 400 cases while 200 new businesses were founded within the city borders.<sup>175</sup> The flocks of labourers who continued to pour into Moscow settled ever-further from the centre, meaning that the actual city border, the motorway ring, had to be broken through at several points. In 1985, the authorities finally yielded to population pressures and incorporated numerous settlements, leading to Moscow's now characteristic ring shape with tumour-like formations on all sides. At the Soviet Union's demise, about nine million people lived in Moscow, which had also grown substantially in surface area.

### Moscow's migrants fortify working-age population

Since very few children are born in Moscow, the population is, on average, somewhat older than the population in the whole of Russia. Younger generations, in particular, are significantly underrepresented in the city. Nonetheless, the capital has a higher percentage of available labour than the rest of the country. This is due to immigrants to Moscow, who are mostly between 20 and 39 years old, and who constitute between 30 and 40 percent of the working-age population.<sup>176</sup>



Population by age group and gender in Moscow and Russia in percentages of the total population in 2008 (Source: Rosstat)

### Marginal groups in a boom town

The fragmentation of the Soviet Union meant that international migration, compared to internal migration, became more significant, although it did not actually exceed the latter. It began in the 1990s with Russians who had been cut off from the homeland by new borders and were now returning. These were followed by Central Asians, Moldovans, Ukrainians and Southern Caucasians, which meant that between 1990 and 2003 alone, Russia took in eight million former Soviet



citizens.<sup>177</sup> At the turn of the century, South-East Asians and Africans were among the migrants, of whom about half are striving to reach Moscow.<sup>178</sup>

Prospects in the capital certainly do sound seductive. Nationwide, Moscow's average disposable income of about 1,600 international dollars per month is unrivalled. In 2008, there was almost no unemployment at 0.9 percent. Over 90 percent of the working-age population had regular employment, even though this rate is artificially high due to the numerous commuters from the surrounding areas.<sup>179</sup> And gender equality also looks good: about 80 percent of women of working-age earned their own money in 2007.<sup>180</sup>

This seemingly rosy picture, however, cannot entirely hide spreading inequality. In 2008, the wealthiest quintile of the population earned 58 percent of total income while the poorest quintile had to make do with just three percent. Despite low unemployment rates, and even though the city administration has increased social benefits in the past few years, about twelve percent of the population lived in poverty in 2008, which was only slightly lower than the nationwide average. The Gini coefficient, which mirrors the degree of inequality in income distribution, was 0.54 in 2008, higher than in any other Russian region.<sup>181</sup> Even Hong Kong, which is considered the city with the largest income differences in Asia, has a value of no more than 0.43.<sup>182</sup>

It is migrant workers especially who suffer from the interplay of low wages and high living costs. They are often forced to live in small spaces and in meagre circumstances in order to survive on their low wages and to support relatives in the homeland. Nonetheless, the difference in wealth between Russia and its neighbouring countries is so blatant that Moscow remains attractive.

### No warm welcome for migrants

The Russian authorities are not amused by the wave of migrant labourers. In order to secure employment for the native population, the administration has on several occasions made it harder for migrants to settle in Russia and pursue regular work. Nationwide, even about half of the registered migrants worked in the shadow economy in 2007.<sup>183</sup> A lucrative business for human traffickers and dubious employment agencies has long taken root. The regular labour market and public coffers lose valuable potential, for the capital needs more labour due to demographic changes: by 2030, the number of people of retirement age will have increased from 23 to over 35 percent while the number of people in the working-age range of 16 to 59 years for men and 16 to 54 years for women will probably have decreased from 64 to 54 percent.<sup>184</sup>

Moscow is especially dependent upon the labour of unskilled migrants. Its own population is seldom prepared to work for starvation wages in construction or cleaning. Migrants from Central Asia, on the other hand, often seek this kind of work, which provides one of the few alternatives to crime. However, it is the latter that has become the subject of discussion in both the political arena and the media. And Moscow's citizens respond accordingly: In a 2005

survey, the majority of those questioned condoned tougher migration policies.<sup>185</sup> A fourth of those questioned wanted a general prohibition on international migrants. And the readiness to resort to violence among the native population has also grown to frightening proportions. In another survey, almost 60 percent of the Africans living in the city said that they had been the victims of racially-motivated violence.<sup>186</sup> Statistically speaking, a foreigner is shot, stabbed or beaten to death in Moscow every six days.<sup>187</sup>

2007 seemed to constitute a turning point in migration policy. Instead of restrictive measures, the Russian government passed a law for the first time making it easier for migrants to live and work legally in Russia. Where employers used to be able to decide whether or not to apply for a work permit and to determine how many permits to apply for, "visa-free" migrants could now claim this right for themselves. The measures quickly proved successful. In comparison to the beginning of the century, the share of legal migrants in the total population of migrant labourers grew considerably. Tax revenue also increased.<sup>188</sup>

But these policies do not follow a long-term strategy: despite the population decrease in many parts of the country, Moscow's migration programme for 2008 through 2010 sought to replace international migrants with migrants from other Russian regions. In order to curb racist attacks, it further planned to separate foreigners from natives by settling them in separate towns.<sup>189</sup>

### Demographic pioneer

So what will Moscow look like in the future? According to estimates, the city's population will reach its peak, with eleven million people, in the course of the next decade before it gradually begins to decrease to about ten million people in 2030.<sup>190</sup> This projection will probably be adjusted upwards, however, as soon as numbers from the 2010 census are available. Then those inhabitants of Moscow who have not yet been registered will also be statistically accounted for. The last census of 2002 added 1.7 million to the city practically overnight.<sup>191</sup>

The most recent population projections highlight one particular aspect of Moscow which had been obscured for decades by the countless numbers of migrants: the dearth of children. Even in the 1960s, women in the capital had the lowest fertility rate in Russia, bearing only 1.4 children in the course of a lifetime.<sup>192</sup> In 1999, women were only having 0.93 children before the number grew to 1.32 in 2008. Without migration, Moscow's population would have shrunk by one million people since 1989. In reality, it has grown by two million.<sup>193</sup> Moscow benefits greatly from the fact that the majority of its newcomers are between 20 and 39 years old. The migrants do not only contribute to the city's economic strength but increase the number of its potential parents.

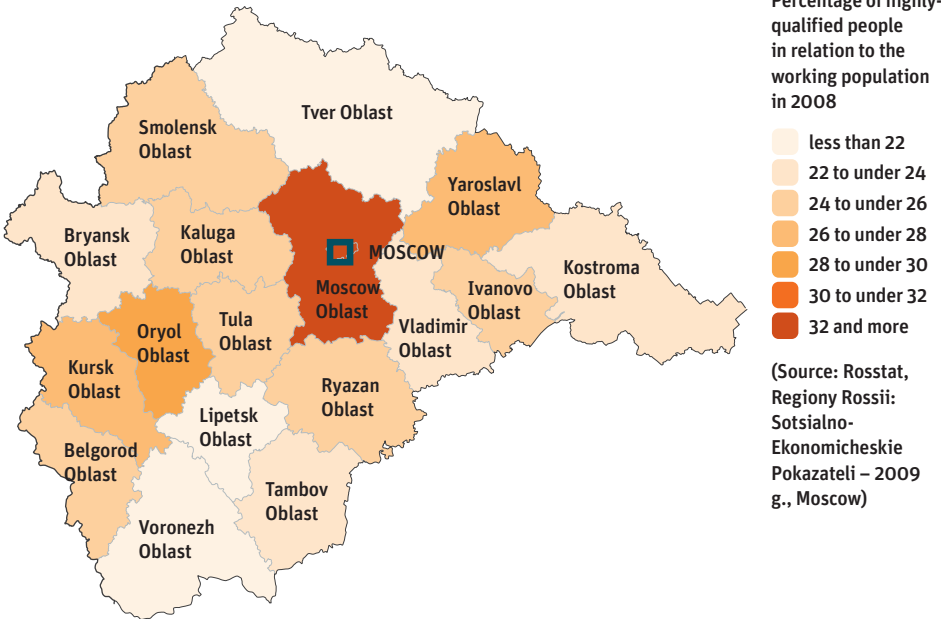
After adopting the two-child family model earlier than the rest of the country, the capital has once again become a demographic pioneer. Moscow's women give birth later in their lives, following the childbearing patterns of developed western nations. At the same time, the number of abortions is decreasing and more and more women use safe, modern methods of contraception. In 2000, the number of abortions was still higher than the number of births. Today, the ratio of newborns to abortions is about two to one.<sup>194</sup>

In contrast to the city, Moscow Oblast will continue to grow after 2015.<sup>195</sup> For migrants, it is not only easier to find affordable housing here; it is also much easier to register. Furthermore, Moscow's surrounding areas have undergone remarkable economic development since 2003, with growth rates of an average of 17 percent annually.<sup>196</sup> The attractiveness of the "new industry and logistics belt" around the city is also attested to by the level of foreign investment, which almost doubled between 2006 and 2007.<sup>197</sup> Incomes rose as a consequence, by 121 percent between 2003 and 2008.<sup>198</sup> This trend could continue in the future when the Skolkovo innovation centre west of Moscow, where up to 40,000 scientists and engineers are supposed to find employment, is completed by about 2015.

This notwithstanding, migrants still see the urban surroundings as a springboard to the city. That migration to the city proceeds step by step eases the situation in the centre's housing market but it also leads to more and more commuters, which only exacerbates traffic problems. Despite innovative suggestions, the city's administration has yet to find a solution. Currently, there are plans to construct high-speed motorways over Moscow's roofs and to erect pontoons on the Moskva River as floating parking garages.

### Moscow is the only destination for university graduates

A third of all working people in the Central Federal District have a university degree. This means that Central Russia has the greatest density of highly-qualified labour. The regional analysis shows, however, that only Moscow and its surroundings contribute to this high value. Banks, research institutes and modern industrial enterprises require a steady influx of skilled labour. In contrast, the old industrial sites north of the capital, in particular, count among the least attractive destinations for university graduates. Less than one-fifth of the employed population in this area has a university degree.



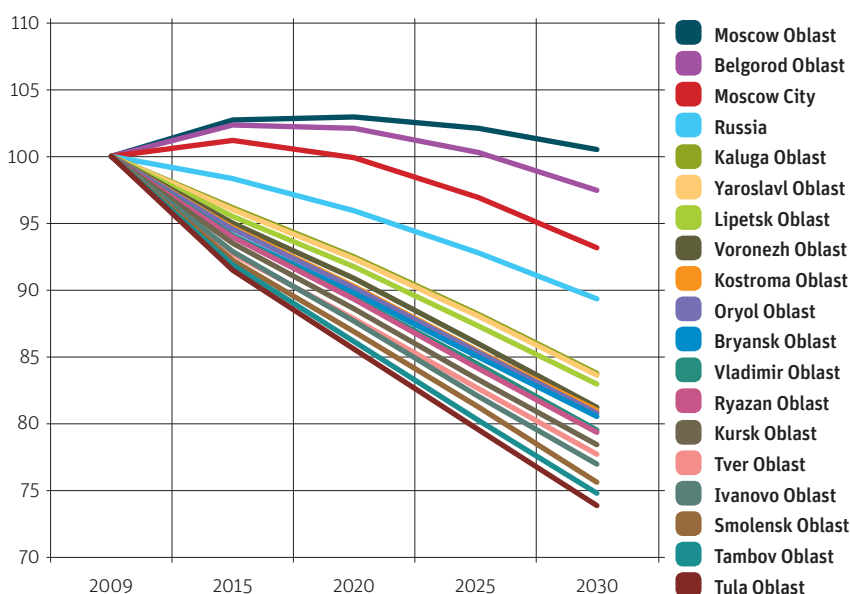
## Gradual demise outside the city

Moscow city and Moscow Oblast comprise but two of the 18 regions which make up the Central Federal District. This centre hardly reflects the situation of the entire territory. The further one goes from the capital, the greater the demographic problems: the numbers of children are extremely low, the society is ageing more rapidly than elsewhere, and more people die relative to the population than anywhere else in Russia. The Tver and Tula Oblasts, which border Moscow Oblast on the north and southwest respectively, lose far more than one percent of their populations annually due to mortality. Over a fourth of the population have already passed employment age. In rural areas, this share is even more than 30 percent.<sup>199</sup>

The consequences of the early decrease in fertility in the Central Federal District have hit the territories outside of Moscow particularly hard since they can only partly make up for continuing population ageing with young migrants. The majority of regions in the Central Federal District have not been able to create a competitive economy following the transition from the Soviet era. Mechanical engineering and foodstuffs production, which dominate in many regions, cannot compete with cheap imports and continue to lose their markets. In many places, the economic downfall triggers depression and social problems. An above-average number of men die in the Central Federal District before reaching retirement age. The most common causes of death – poisoning, accidents and heart disease – indicate that alcohol consumption and unhealthy lifestyles as the greatest risk factors.

## The consequences of low fertility

17 of the Central Federal District's 18 regions will suffer population losses by 2030, in comparison to 2009. In 15 of these regions, the losses will even be greater than the Russian average. Only Moscow Oblast and the economically thriving Belgorod Oblast on the Ukrainian border will remain demographically stable. Even though many territories of the Central Federal District can rely upon immigration, population losses – in some cases drastic ones – are unavoidable, since women in Central Russia have been bearing few children for decades.



Population projections for the Central Federal District's regions to the end of 2030,

1 January 2009 = 100 percent

(Source: Rosstat, *Predpolizhitelnaya Chislennost Naseleniya Rossiyskoy Federatsii do 2030 goda*, Moscow)

Few regions stand out from this otherwise grim picture. One of them is Belgorod Oblast, located on the Ukrainian border. Agriculture and, in particular, mining and iron ore processing flourish. The world's largest-known iron ore basin, the Kursk Magnet Anomaly, hides 90 percent of its treasure within the oblast. This has ensured that Belgorod has experienced the most rapid industrial growth in the Central Federal District in the last ten years. In order to meet the demand for labour and to respond to an ageing population, the oblast actively recruits migrants. It is primarily Russian refugees from the North Caucasian republics

who easily find work in cities such as Gubkin or Stary Oskol, thanks to public support, and who use the benefits they receive for housing.<sup>200</sup> As a result of this continuing stream of migrants, current population growth in Belgorod will continue in the next decade.

# NORTHWESTERN Federal District

Population in 2010	13.44 million
Population in 2030 (projection)	11.42 million
Population/km <sup>2</sup> of land in 2010	8
Total fertility rate in 2005-2010	1.41
Life expectancy at birth in 2005-2010	68.2
Annual net migration 2005-2010	27,721
Mean age in 2010	39.8



(Source: see page 139)

## Recovery following a steep fall

Disagreement over the planned Okhta Centre on the Neva River has been escalating in St. Petersburg for years. The massive building complex, a 403-metre-high sky-scraper in the form of a corn stalk, would be Europe's tallest office building. Following completion, the oil giant Gazprom Neft would make this its headquarters. The city initially authorized the building but many citizens feared the ruin of Petersburg's historical cityscape. After the UNESCO World Heritage Committee also protested, the governor of St. Petersburg, Valentina Matviyenko, announced that the complex would not be built in the centre but on the outskirts of the city.

Yet the willingness to invest and the megalomania of large corporations have shown that St. Petersburg is once again a political and economic darling. It is not only state-controlled firms such as Gazprom Neft or VTB, Russia's largest bank (formerly Vneshtorgbank), which have begun to pay taxes on the Neva; foreign firms are also increasingly taking advantage of the convenient transport situation in Russia's second-largest city.

At the same time, the Northwestern Federal District, which stretches over 1,500 kilometres from the Baltic Sea to the Urals, suffered extremely from the fall of the Soviet Union. Here more than elsewhere, the economic collapse resulted in social problems. Between 1990 and 2003, life expectancy dropped from 69.1 to 63.3 years. Nowhere in Russia was the decline so drastic.<sup>201</sup> Since then, life expectancy has risen again to 67.4 years, but 11.8 of 1,000 men of working-age still die annually in Northwestern Russia. In the Pskov and Novgorod Oblasts south of St. Petersburg, the number even exceeds 16.<sup>202</sup> In Germany, the mortality rate is only 3.2.<sup>203</sup>

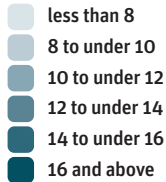
One reason for the grave health crisis in Northwestern Russia is the above-average number of ethnic Russians who have responded to economic uncertainty with particularly unhealthy lifestyles. Furthermore, processing industries play an important economic role, the very sector in which the end of the planned economy resulted in the greatest loss of jobs. Finally, people in the northern areas of the district, in Murmansk and Arkhangelsk Oblasts as well as the Komi Republic, are subject to an extremely harsh climate, otherwise familiar

only to the inhabitants of Siberia's northern regions.

While mortality rates increased, fertility in Northwestern Russia, which was relatively low to begin with, sank. In 1999, the total fertility rate in St. Petersburg dropped to an all-time low of 0.86 children per woman. Since then, it has risen to 1.40. But the federal district still holds last place nationwide, with only 1.41 children per woman. Among Russia's 80 regions, Leningrad Oblast surrounding St. Petersburg, which has an average rate of 1.19 children per woman, was at the lowest end of the scale.<sup>204</sup>

In 2009, 13.5 million people lived in Northwestern Russia, 1.8 million fewer than right after the fall of the Soviet Union. Since the federal district registered more immigrants than emigrants in this period, the population decline can only be explained by excess mortality. At some periods, 120,000 more people died annually than were born. The real extent of this demographic crisis

Percentage of people aged 65 or older in the total population in 2010



(Source: Rosstat)



## Young north, old south

In Russia's European north, less than one in ten inhabitants is older than 64. This goes back to the Soviet era, when many young men went to work in Murmansk, Arkhangelsk and the Komi Republic. Since 1991, the same age group has been emigrating in huge numbers, resulting in an older society. Nonetheless, there is still twice the number of older people in some areas of the southern regions of Northwestern Russia than in the northern ones. In Pskov Oblast, 41 percent of all women in rural areas have reached the retirement age of 55. Pskov as well as Tver Oblast in Central Russia are the two Russian regions in which more people die than are born every year already since the 1970s.<sup>212</sup>

will make itself felt in the upcoming years, when the thinned-out generations of the 1990s reach parenting age and the number of births declines once again. By 2030, the district's population could have decreased to 11.4 million people. Only the Far East would experience a greater loss.<sup>205</sup>

## Shortage of skilled workers in St. Petersburg

The last few years have seen some relief. Between 2005 and 2009, the birth deficit decreased by half, to 53,000 people, while the annual migration surplus tripled to 28,000 people.<sup>206</sup> The main beneficiary of these developments was St. Petersburg, which in 2009 gained over 30,000 inhabitants from migration alone and has enjoyed a growing population for the first time since 1991. Since the average inhabitant here is quite old, however, Russia's second-largest city will shrink substantially in the future.<sup>207</sup>

Currently, 4.6 million people live in St. Petersburg, which has managed to once again become a pole of economic growth following the serious crisis of the 1990s. Since 2000, GDP has grown by an average of 9.6 percent annually.<sup>208</sup> Alongside the traditionally strong machine and ship-building industries, the city has become the centre of the Russian automobile industry. Toyota, General Motors and Nissan now produce their goods at the mouth of the Neva and have established many of their suppliers in Northwestern Russia. This is also why St. Petersburg is doing relatively well in the development of small and medium enterprises so crucial to the growth of the middle-class.\* In comparison to Moscow, the city has a higher density of firms with 100 or 250 employees respectively.<sup>209</sup> In both cities, small enterprises generate one-fifth of GDP, markedly more than in all other regions of the country.<sup>210</sup> And St. Petersburg is also a significant locus of science and innovation, with 120 universities and colleges. In 2008, the city's expenditures for research and development constituted three percent of GDP. Only Kaluga Oblast and Nizhny Novgorod in the Volga Federal District, the stronghold of information technology, had a higher percentage.<sup>211</sup>

\* Small businesses in Russia may have a maximum of 100 employees and an annual turnover of 400 million roubles. Medium-sized businesses employ up to 250 people and have a turnover of one billion roubles.

St. Petersburg's biggest plus points are its access to the ocean and proximity to Western Europe and Moscow. For a long time, investors could also rely on a comparatively large pool of qualified labour. Boasting an employment rate of 86.5 percent and a very low unemployment rate of two percent, the city is, however, beginning to suffer from a shortage of skilled workers. Immigrants can only partially make up for the growing gap. From 2012 on, the working-age population in St. Petersburg will shrink by about 40,000 annually despite migration.<sup>213</sup>

One reason for this is the enormous pull of Moscow, which is still more popular among Russian migrants than the Baltic Sea metropolis. St. Petersburg only recruits more immigrants than the capital from its neighbouring regions and the country's European north.<sup>214</sup> International immigrants cannot make up for the loss of qualified labour due to the frequently low level of their skills. As in Moscow, there are also many migrants living in St. Petersburg who are not registered and therefore cannot

pursue regular employment. This is also why social problems such as crime, drug abuse, prostitution, homelessness and xenophobia are spreading.

The economic upswing in Leningrad Oblast surrounding St. Petersburg is best demonstrated by its poverty rate: whereas in 2000 over half of the population had to survive on incomes below the subsistence minimum, only 13.8 percent had to in 2008. Following regions with natural resources, Leningrad Oblast has had the country's highest rate of capital investments in proportion to the number of inhabitants in the last few years.<sup>215</sup> The area has shaken its economic dependency on the crude oil refinery in Kirishi, which was responsible for up to 40 percent of the region's tax revenues in the mid-1990s. The foodstuffs industry, wood processing, trade and mechanical engineering have grown significantly.<sup>216</sup>

Proximity to the enormous sales market and transportation hub of St. Petersburg has helped promote economic diversification as have regional policies, which banked on tax breaks for foreign investors at an early phase. In addition, the rouble crisis of 1998 helped tap formerly idle economic potential: investors sold collapsing government bonds and redirected their capital into the real economy. The devaluation of the rouble made it easier, as well, to sell export goods. And since import goods became more expensive at the same time, it was once again worth producing for the domestic market, too.

Similarly to the rest of the country, poles of growth have emerged in Leningrad which account for the bulk of total investment. Cities on the ocean near St. Petersburg such as Vsevolozhsk and Primorsk have especially profited from the influx of capital. Since 2001, the petroleum pipeline from Yaroslavl

### Street children: the young victims of the transition period

It wants to be the shining gateway to Europe. The economic boom of the last few years has brought St. Petersburg much closer to its goal. Yet behind the bright façades of the Hermitage and the Peter and Paul Cathedral, poverty and unemployment are part of the reality of Russia's second-largest city. Many young couples are compelled to give up the idea of children for financial reasons. Others have children but cannot get a handle on their own problems: alcohol-addicted parents and domestic violence are major reasons for Russian children to run away from home and to seek happiness on the streets.

They find subway shafts, cellars and sewers, the only places in cities such as St. Petersburg or Moscow which provide protection from the winters. These cities have a particularly high number of children living on the streets. According to official figures, there are 150,000 homeless children nationwide, some of whom are not older than six. No one knows exact numbers.<sup>217</sup> The children, who are often physically and mentally underdeveloped, survive by begging, petty theft and prostitution. Many anesthetize themselves with all kinds of drugs in order to temporarily shut out the cold, hunger and boredom. Those who consume drugs intravenously increase their risk of infection with HIV more than twenty-fold. In St. Petersburg, about 40 percent of all 15 to 19 year-old street dwellers were HIV positive in 2007.<sup>218</sup> Many die before their lives have really begun.

Not all street children actually live on the street. Many are sent on a daily basis by their parents to beg or steal in order to improve the family's income. A growing number of these are the children of labour migrants, especially from Tajikistan, Azerbaijan and Moldova. There are hardly any alternatives to life on the street, since the children and their families live in the city without being registered, making school attendance impossible.

When Russian children are picked up by the police, they end up in one of the country's 1,147 orphanages, which proliferated rapidly in the 1990s.<sup>219</sup> These homes lack personnel and sufficient supervision, which leads many children to return to the streets. Prevention programmes for families at risk are only being developed slowly. Nonetheless, a growing number of children find a new home with foster parents. In the 1990s, it was possible to find adoptive parents for more and more children. Since 2005, this trend has once again declined, since new hurdles have been set up for foreign adoption in particular.<sup>220</sup>

at the Volga has terminated in Primorsk; today, the largest oil terminal on the Baltic Sea is located here. In Vsevolozhsk, firms such as Ikea and Ford use the logistically convenient location near the Petersburg motorway ring.

That enterprises in Leningrad Oblast will spread to cover greater surface area is, however, unlikely, since the region has too few people for widespread development.

Currently, the area loses about one percent of its population annually because more people die here than are born. Nationwide, the situation is more dramatic only in the neighbouring regions of Pskov and Novgorod, as well as in the Tver, Tula and Smolensk Oblasts in Central Russia.<sup>221</sup>



Kaliningrad: Russia’s island in the EU

Kaliningrad, formerly Königsberg, is wedged between Poland and Lithuania, cut off from the rest of the country. After Josef Stalin drove out the remaining 100,000 Germans immediately following the Second World War, he began to expand the strategically important Baltic Sea region and the western tip of the Soviet empire and to turn it into a central base for the Baltic fleet. He did this, as well, because the area had a harbour which remained free of ice throughout the year. When the Soviet Union fell in 1991, the military employed about 120,000 people here.<sup>222</sup> Today, the armed forces remain an important employer. Since the independence of Estonia, Latvia and Lithuania in 1991, many soldiers have been redeployed here. For other economic sectors, however, the dissolution of the Soviet Union was a very tough break. Agriculture and industry suffered from the fact that, in one fell swoop, the next domestic sales market lay 300 kilometres away. Industrial production sank between 1990 and 1999 by over 70 percent, over 20 more than in the rest of the country.<sup>223</sup>

Despite its economic downfall, Kaliningrad’s population grew between 1991 and 1999 from 890,000 to 961,000 people. A wave of Russian immigration from Soviet successor republics, especially from the Baltic states and Kazakhstan, was responsible. Including inner-Russian migration, the region gained a total of more than 10,000 people and was therefore able to compensate for the natural population loss of about 5,000 people. But since the beginning of this century, the extent of Russian immigration has largely dwindled, and the Kaliningrad region has lost about 25,000 inhabitants.<sup>224</sup> In the future, this shrinkage will accelerate since the region’s fertility rates count among the country’s lowest.

In order to counter the crisis of the 1990s, the exclave has had to open up to international trade. A special economic zone established in 1996 is supposed to act as a catalyst for the port city’s manufacturing industry. Import duties were abolished immediately for any enterprise which could process imported products such that

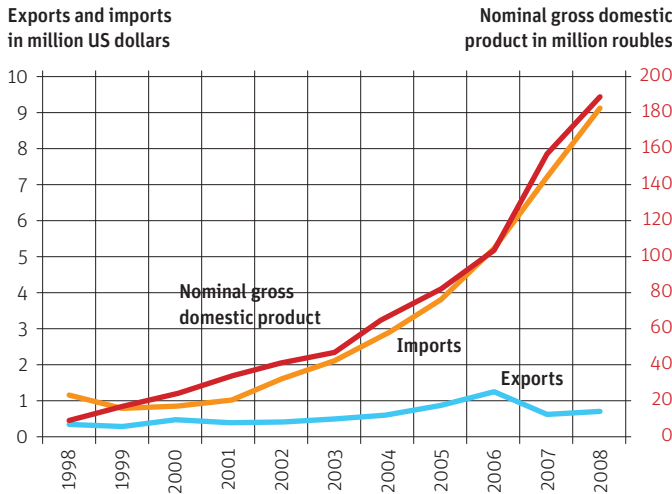
their respective value increased by 15 or 30 percent, depending on the type of the product. In fact, these “finishing industries” have contributed substantially to the fact that annual economic growth in Kaliningrad Oblast since 2000 has averaged 10.4 percent and that the unemployment rate fell from 15.6 to 3.4 percent between 2000 and 2007.<sup>225\*</sup> It is primarily electronic consumer goods which are being manufactured. In 2007, enterprises in Kaliningrad produced about 87 percent of all Russian TV sets.<sup>226</sup>

A second special economic zone established in 2006 has also benefited the economy. It guarantees corporations six years of tax exemption as well another six years of halved tax-rates provided that at least 150 million roubles are invested in the region within three years. Foreign direct investments promptly rose between 2005 and 2007 from 15 to 120 million euros; primarily soya bean and synthetic processors as well as logistical enterprises have profited from the boom.<sup>227</sup>

How sustainable current growth really is remains to be seen. Only when the concessions of the first special economic zone come to an end in 2016 will it become clear to what extent the new industries can survive without subsidies. Alongside tax breaks, Kaliningrad’s second large locational advantage – its low wage levels – may become less significant in the future due to limited skilled labour. Between 2005 and 2009, the average monthly wage already grew by about 240 percent, the highest increase in Northwestern Russia.<sup>228</sup> On the other hand, tourism, which has also recently enjoyed government support, has growth potential.

Imports as growth engine

Economic strength has increased in proportion to import-growth in Kaliningrad Oblast since the beginning of the century. Only Moscow imports more goods per capita than Kaliningrad. But the upswing is in danger: Russia’s possible entry to the World Trade Organization could mean the end of the tariff reductions which made massive import growth possible in the first place.



GDP and foreign trade in Kaliningrad Oblast between 1998 and 2008 (Source: Rosstat, Tsentralnaya Baza Statisticheskikh Danykh, Moscow)

\* In 2008, the rate increased once again to 8.7 percent due to the economic crisis. As in the 1990s, fluctuations in the Russian economy were over-proportionally noticeable in Kaliningrad.



## Emigration from northern regions

While there is a shortage of labour in St. Petersburg and Kaliningrad, people continue to emigrate from the district's northern regions. In the country's European north, Soviet planners established military institutions, natural resource companies and processing industries with no regard for their competitiveness. This economic construct fell with the Soviet Union. As late as 2009, the Komi Republic lost over 7,000 people or about one percent of its population to emigration. A similar development could be observed in the Murmansk and Arkhangelsk Oblasts.<sup>229</sup> Since the last Soviet census in 1989, Murmansk Oblast has lost 28 percent of its population and the other two northern regions have lost about one-fifth. In stark contrast to the federal district's southern regions, emigration was responsible for over half of the losses.<sup>230</sup>

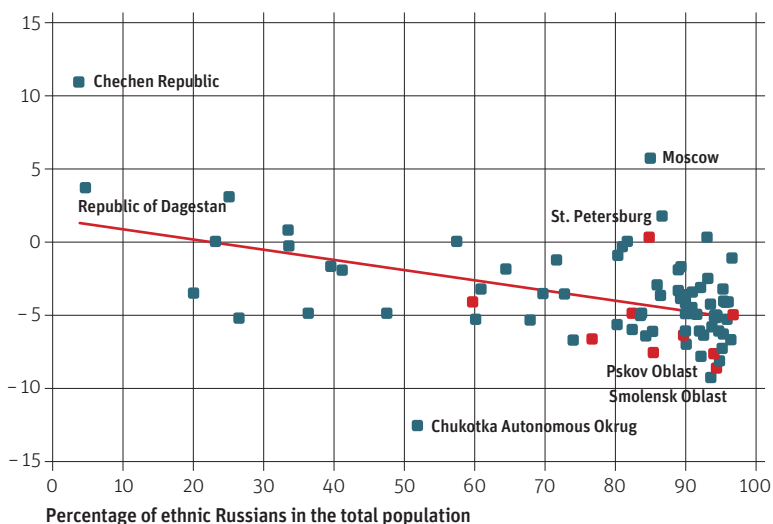
Murmansk Oblast has become symbolic of the Soviet planners' short-sightedness. The area was the main base for the former Soviet, and for today's Russian Northern Fleet. Following the fall of the Soviet Union, the Russian leadership weeded out a large number of its ramshackle nuclear submarines but could not safely scrap them due to a lack of both money and know-how. Instead, they sank the submarines in the Barents Sea or simply let them rot in the harbours. It was only when they received billions in subsidies from the G8 nations in the wake of a global disarmament and atomic security campaign that the approximately 200 submarines were properly disposed of in 2002. While the non-radioactive submarine parts were largely recycled and sold, the German Energiewerke Nord GmbH, a special enterprise to scrap nuclear plants, created a long-term temporary storage facility for the reactor blocks. The reactors will stay there, embedded in sarcophagi, for about 70 years, until their radioactivity has decreased enough to finally dismantle them.<sup>231</sup>

## Crisis-prone Russians

Life expectancy fell most drastically during the transition from a planned to a market economy in those areas where the number of ethnic Russians was highest, including the Northwestern Federal District. Russians live primarily in the wealthier, industrialized areas, but they also suffered most from the Soviet Union's dissolution. A tried-and-true Russian antidote to unemployment and a lack of prospects is alcohol, which has extensive health-related consequences. In areas which are poor, on the other hand, where a more ethnically diverse population often lives, the danger of economic downfall is lower. For religious reasons, non-Russian groups frequently consume less alcohol.

Percentages of ethnic Russians in the total population in the 2002 census and the development of life expectancy for children born between 1990 and 2008 by Russian region; regions in Northwest Russia are marked in red

Development of life expectancy in percentages



(Source: Author's calculations based on Rosstat, Tsentralnaya Baza Statisticheskikh Danykh, Moscow; Demoscope Weekly, Perepisi Naseleniya Rossiyskoy Imperii, SSSR, 15 novykh nezavisimyykh gosudarstv, Moscow)

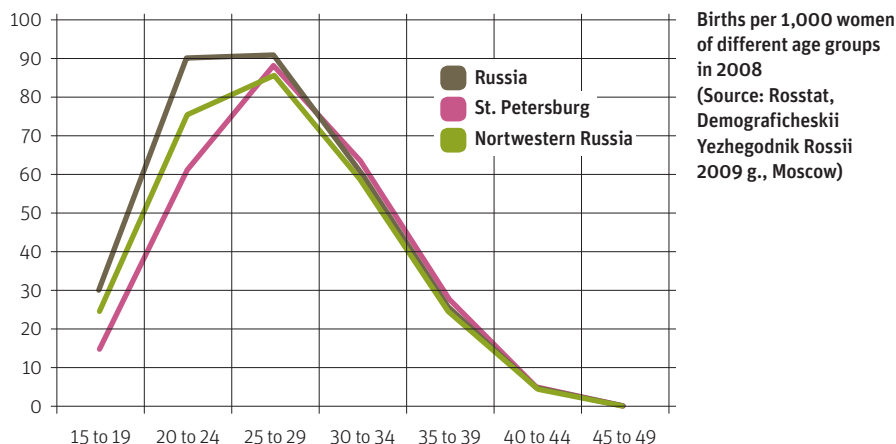
Emigration from the closed city of Severomorsk, the Northern Fleet's main port, and the region's capital of Murmansk were not solely responsible for the population decline on the White Sea. In Apaty and Monchegorsk, centres of the metal industry, there were also not enough jobs for the people who had in many cases come only a few years earlier. In addition, there are – similarly to many regions in the Far East – relatively few women in Murmansk Oblast due to the significance of the military as well as mining and other industries. This has had demographic consequences: in the 20 to 29 year-old age group so crucial to reproduction, there are five men to four women whereas the ratio in the rest of the country is almost perfectly balanced.<sup>232</sup>

## High degree of specialization carries risks

One of Northwestern Russia's problems is that the region's well-being is closely connected to the vitality of a few economic sectors. This is true of the wood industry in the Republic of Karelia on Finland's border. About one-fourth of Russian paper is made from the trees felled here.<sup>233</sup> When demand crashed during the economic crisis of 2009,

## Few young mothers

Nowhere in the Russian Federation do women have fewer children than in the Northwestern Federal District. This is primarily due to the fact that they begin to start families later than anywhere else. Well-educated women, in particular, seldom have children before the age of 24. From 25 on, fertility rates begin to match the nationwide average. At the time that women in Northwestern Russia have their first child, however, women elsewhere in the Federation already have a second or third. The late-birth trend, which is also typical for Western Europe, is strongest in St. Petersburg.



unemployment shot up to over ten percent. In 2006, it had only been 3.6 percent.<sup>234</sup> In 2008, Karelia already belonged to the 14 Russian regions in which GDP per capita decreased in comparison to the previous year. The same was true for the neighbouring regions of Murmansk and Arkhangelsk as well as Nenets Autonomous Okrug, where natural resource industries are responsible for a large portion of GDP.<sup>235</sup> The Republic of Karelia is an example of how seriously the crisis can affect demographic developments: statisticians noted in 2000 that the republic had the country's highest rate of alcohol-related deaths.<sup>236</sup> The decline in life expectancy was more marked here between 1990 and 2005 than anywhere else in Russia.

Steel is to Vologda Oblast what wood is to Karelia. With a GDP per capita of roughly 15,000 international dollars, Vologda Oblast counts among the federal district's wealthiest regions; but the steel giant Severstal alone contributes about 70 percent to the regional budget.<sup>237</sup> Half of the 1.2 million inhabitants

live in the capital, Vologda, or in Cherepovets, where Severstal has its headquarters. Large swaths of the region, which is almost four times the size of the Netherlands, are by contrast demographic distress areas. The last census in 2002 counted a total of 8,000 villages, of which only nine percent had more than 100 inhabitants. The average number of inhabitants was 49.<sup>238</sup> Since primarily older people live in the villages, many settlements will soon disappear from the map entirely.

Even though Russia's steel industry in the last few years has slipped into a crisis and Severstal had to lay off about 9,000 employees in 2008 alone, the firm's prospects are not bad. In times of strongly fluctuating prices for iron ore – the main natural resource for steel production alongside coal – the company profits from the fact that it has its own storage facilities in Vorkuta and on the Kola Peninsula. Furthermore, the Priraslomye and Dolginskoye oil fields as well as the gigantic Shtokman gas field in the Russian Arctic promise lucrative contracts. For off-shore production in the Barents Sea, not only drilling sites but oil refineries, gas liquefaction plants and pipelines need to be built.

The development of Arctic fossil fuel reserves has made Nenets Autonomous Okrug, which is part of Arkhangelsk Oblast, one of the country's wealthiest regions. Statistically speaking, every one of the mere 42,000 inhabitants generates an annual 88,000 international dollars.<sup>239</sup> In reality, wealth remains in the hands of large firms while the indigenous population, which constitutes a third of the entire population, lives in perennial poverty.<sup>240</sup> The natives often have no access to running water or sufficient medical care. This affects life expectancy, which is only 65 years old. On average, men only reach 59, living about twelve years fewer than women.<sup>241</sup>

# SOUTHERN Federal District

Population in 2010	13.71 million
Population in 2030 (projection)	12.47 million
Population/km <sup>2</sup> of land in 2010	33
Total fertility rate in 2005-2010	1.50
Life expectancy at birth in 2005-2010	69.9
Annual net migration 2005-2010	28,440
Mean age in 2010	39.5



(Source: see page 139)

## Russia's breadbasket

When the Soviet Union collapsed at the beginning of the 1990s, many observers expected the country's vast, inefficient and run-down agricultural corporations, the kolkhozes and sovkhozes (collective and state farms), to quickly shift to family farms. They would learn to produce more efficiently taking Western Europe's successful, family-run farms as a model. Yet 20 years later, 70 percent of sunflower seeds, 80 percent of grain and even 90 percent of sugar beets in Russia are produced by large corporations. Only vegetable and potato cultivation as well as cattle breeding are primarily in the hands of small farmers.<sup>242</sup> The Southern Federal District, the country's agricultural centre, is no exception.

Fertile black soil (chernozem), a sunny climate and proximity to important Black Sea ports create optimal agricultural conditions in the south. About one-sixth of Russia's agricultural commodities hail from just three of the district's provinces: Krasnodar, Rostov and Volgograd.<sup>243</sup> On the fields of Krasnodar Krai, about 185 billion roubles worth of goods were produced in 2008, more than in any other region nationwide. Grain production topped the list at eleven million tonnes even though there is more arable land in other areas.<sup>244</sup> Nonetheless, people employed in agriculture either earn little or are paid in kind.<sup>245</sup> At 799 international dollars, monthly income in Krasnodar in 2009, for example, was significantly lower than the national average of 912.<sup>246</sup>

For producers, however, the cultivation of grain and sunflowers is especially lucrative. Giant so-called "agriholdings" often provide integrated supply chains; this means that they do not only produce, they also process, transport and market their own products. The "Yug Rusi" company from Rostov Oblast, which has approximately 200,000

hectares of land, is the region's largest corporation and directly presses harvested sunflower seeds into cooking oil, producing 80 percent of Russia's sunflower oil.<sup>247</sup> Yug Rusi, like other large companies, can rely on the newest technical plants for production and processing since investors from other branches of the Russian economy like to put their money into agriholdings.

When it comes to transportation and shipping of their produce, however, firms need to use infrastructure that dates back to the Soviet era and urgently requires modernization. The necessary reconstruction and expansion of Black Sea port terminals is well underway, but by no means sufficient to meet the increased volume of export.

## Congenial geographic location

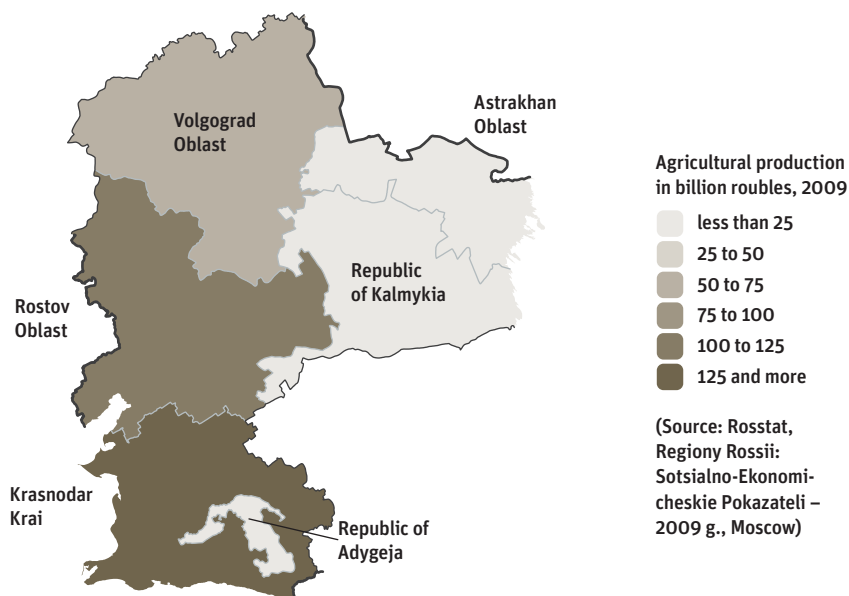
Despite relatively low incomes, many regions of the Southern Federal District attract immigrants from other regions such as the North Caucasus, as well as the South Caucasus, Central Asia and Ukraine. In Krasnodar Krai, there has been a net migration surplus of 600,000 people since 1993. This is why the population grew from 5.05 to 5.14 million inhabitants between 1989 and 2009 even though significantly more people die here than are born. Due to the number of economic possibilities, which encompass trade in Novorossiysk, Russia's only deep-water port on the Black Sea coast, agriculture and tourism, Krasnodar Krai is one of Russia's most densely populated regions, with 68 inhabitants per square kilometre.<sup>248</sup> Nonetheless, there are disproportionately high numbers of families with children and pensioners among the immigrants, which is due, among other things, to Krasnodar's attractive location on the Black Sea and the Mediterranean climate.<sup>249</sup> The latter is also one reason for the fact that the life expectancy of 70.7 years is the highest in the Southern Federal District and two years higher than the Russian average.<sup>250</sup>

In addition to immigrants, Krasnodar Krai also attracts a lot of tourists, who by now generate more money than the flourishing agricultural sector.<sup>251</sup> In the last few years, numerous newcomers and visitors have led to a veritable construction boom in Krasnodar, creating more jobs for immigrants who also accept lower wages. In 2009 alone, 3.4 million square metres of housing went up in the region, more than twice as much as in the entire Far East.<sup>252</sup>

A large part of the construction branch's rise rests upon the 2014 Olympic Winter Games in the exclusive Sochi resort, Russia's most popular, although it is best known as a summer destination with a sub-tropical climate. The actual winter sport locations will be built about 70 kilometres away in the west Caucasian mountains; in many cases, to the detriment of local citizens who will fall victim to illegal eviction and confiscation and to the detriment of the climate, since several sites will be erected in the buffer zone of a biosphere reservation. Several hundred complaints have already been made in local courts.<sup>253</sup>

In Sochi in particular, immigration has also led to racism and xenophobia, problems familiar to Russia. The discrimination of ethnic minorities has even been condoned by the public administration. At the end of 2009, for example, Sochi's mayor, Anatoly Pakhomov, wanted to force Roma to work in construction in 24-hour shifts and then to leave the region when they were done.<sup>254</sup> But inter-ethnic tensions do not only crop up in Krasnodar Krai. In Rostov, Volgograd and Astrakhan Oblasts, which have had significant net immigration since the Soviet Union collapsed, there have been repeated conflicts between the settled population, mostly Cossacks, and the newcomers.

In addition to Krasnodar, the Southern Federal District's economic and social centre is Rostov Oblast, to the north, where 4.2 million people live. It profits from its convenient transport location between Moscow and the Caucasus as well as from the Don River, which flows at this point into the Sea of Azov. In addition to its agricultural significance, it has become an important centre of trade and industry. Wholesale and retail trade generates more than a fifth of GDP, one of the highest nationwide. Another fifth is generated by the processing industry. Mechanical engineering, the coal industry and foodstuffs production are especially significant.<sup>255</sup>



## The heart of Russian agriculture

In the three regions of Krasnodar, Rostov and Volgograd alone, the agricultural sector produced goods worth more than 370 billion roubles in 2009, 15 percent of the entire country's production. In Krasnodar Krai, the product spectrum covers grain, rice, sunflower seeds, wine and even tea. The region is the world's northernmost tea cultivation area. The conditions for arable farming and cattle breeding are bad only in the Kalmykian steppe, the mountains of the small Republic of Adygea and in Astrakhan Oblast.

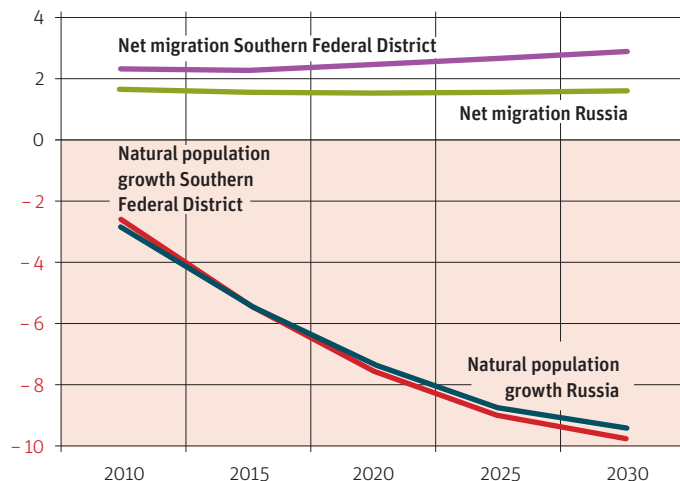
Astrakhan Oblast on the Kazakh border is located as conveniently as Rostov. In this part of the Caspian Depression, a vast area the size of Ukraine and completely below sea level, the Volga flows into the Caspian Sea. For centuries, this has been the centre of the Russian fishing industry. Caviar, especially, long generated a lot of money. Yet sturgeon, which swims into the delta from the sea to spawn, has been extremely over-fished. Between 2001 and 2008, illegal fisheries depleted the population, which was small to begin with, by 40 percent. By now, many species are endangered. The Russian government has prohibited commercial fishing of the most endangered species, such as the Beluga Sturgeon and the Russian Sturgeon, but if similar measures are not taken by the neighbouring countries of the Caspian Sea, this has little chance of success.<sup>256</sup> And the problem of illegal fisheries is not so easy to solve. It requires alternative job opportunities for the region's roughly one million inhabitants.

For a few of these, the oil and gas industries have provided jobs in recent years. In 2007, natural resource production only contributed 2.7 percent to Astrakhan's GDP, but this share will most likely rise in the upcoming years due to vast reserves. The Astrakhan Field, which has 2.6 trillion cubic metres of reserves, is currently the largest operated gas field in European Russia; nationwide, only the Shtokman field in the Barents Sea has larger reserves, with 3.2 trillion cubic metres, but it will only be exploited starting in 2016.<sup>257</sup> The British energy corporation BP puts the Russian Federation's total reserves at over 44 trillion cubic metres.<sup>258</sup>

## Growing birth deficit

Migration surpluses by 2030 will probably not be sufficient in the Southern Federal District or the entire Russian Federation to compensate for the birth deficit. Starting in 2025, they will only be able to make up for a third of natural shrinkage in the Southern Federal District and for one-sixth nationwide. The situation in the Southern Federal District, which is slightly better, can be attributed to significantly higher migration surpluses.

Annual net per 1,000 inhabitants



Natural population growth and net migration in Russia and the Southern Federal District, 2010 to 2030 (Source: Rosstat, Predpolishitelnaya Chislennost Naseleniya Rossiyskoy Federatsii do 2030 goda., Moscow)

By 2030, the Southern Federal District's 2008 population of 13.7 will have shrunk to 12.5 million. The 8.8 percent decrease is a bit lower than the Russian average of 10.2 percent and can probably be traced to immigration, which will continue in the future. This can also be seen within the federal district: Krasnodar Krai, which will take in the most migrants by far, with an annual net migration surplus of about 25,000 to 30,000 people, will lose only 2.7 percent of its population, even in the face of slightly sinking fertility rates. In 2030, it will have about five million inhabitants, thereby remaining Russia's most populated region outside the Moscow and St. Petersburg agglomerations. In contrast, even the economically strong regions of Rostov and Volgograd will lose almost 15 percent of their populations. They will only be able to attract a few people after the stream of ethnic Russians from the Caucasus has ebbed.<sup>259</sup>

This can be explained, on the one hand, by the fact that they are located further from the southern Caucasian migrants' homelands than the Krasnodar region and, on the other hand, that they do not have the long Black Sea coast, which is particularly attractive to older people.

It is not clear to what extent Krasnodar Krai will profit economically from its immigrants. A lot will depend upon the future development of the construction industry, which traditionally employs a major share of migrants. If migrants slide into unemployment, inter-ethnic tensions are bound to simmer further in the region.

# NORTH CAUCASIAN Federal District

Population in 2010	9.25 million
Population in 2030 (projection)	9.95 million
Population/km <sup>2</sup> of land in 2010	54
Total fertility rate in 2005-2010	1.94
Life expectancy at birth in 2005-2010	72.0
Annual net migration 2005-2010	- 7,565
Mean age in 2010	34.0



(Source: see page 139)

## Little hope for peace

According to local legend, a small mishap occurred at creation when the divine messenger responsible for distributing languages set forth: on the difficult passage from the Black to the Caspian Sea which leads over the Caucasus Mountains, his bundle got caught on a mountain peak; the bag, brimming with languages, ripped open and no fewer than 30 different languages tumbled down upon the land which, befitting its topography, was to be named “Dagestan” or “Land of Mountains”. Today, the constitution puts Avar, Aghul, Rutul, Tsakhur and nine other languages on par with Russian.

The colourful mish-mash of ethnic groups and languages as well as the tense relationship to Russia has characterized the North Caucasus for centuries. Here, at the south-eastern end of Europe, where the people live wedged between two seas to the east and west, Russians constitute the largest ethnic group in only one of the districts’s seven regions.<sup>260</sup> More than 50 different ethnic groups fight

for economic survival and political influence. Violence and counter-violence have spiralled ever-faster, impeding the region’s sustainable economic development. In summer 2009 alone, 445 people were killed in attacks, particularly in Ingushetia, Chechnya and Dagestan. This was more than double the victims of summer 2008.<sup>261</sup>

### The heavy heritage of Russian colonization

In the 18<sup>th</sup> century, Russia had for the first time occupied land in the North Caucasus which it then divided among the Cossack and Slavic settlers. The Czarist Empire only gained complete control of the region, however, in 1864, following about 50 years of bloody war. The founding of the Soviet Union created further restrictions: since religion had no place in the Communist state, the Soviets destroyed houses of prayer and schools, particularly those of the Muslim population, and prohibited the Arabic alphabet. In order to prevent Islamic peoples from joining forces to resist the state, the Soviets partitioned the region into several small autonomous territories along very

rough ethnic and linguistic lines without, however, doing justice to its enormous ethnic diversity. This resulted in a few of today’s smouldering conflicts. For example, the drawing board assigned the Caucasian Kabardins and the Balkars, who are of Turkic ethnicity, a common territory, today’s Kabardino-Balkar Republic.

For the 100,000 Balkars, the worst was yet to come. In 1943, Stalin accused them of collaboration with the German Wehrmacht and had them deported to Central Asia and Siberia alongside Chechens, Ingush and Karachay people. It was only in 1957 that Stalin’s successor, Nikita Khrushchev, allowed surviving deportees to return to their homeland, where new problems awaited the approximately 50,000 families: the Russians had, in the meantime, occupied many of their autonomous areas and reduced much of the territory.

After the Soviet Union fell, building tensions exploded into a wave of nationalism: Chechnya declared independence from Russia in 1991, Ingushetia declared its independence from Chechnya one year later and the Balkar minority voted – in vain – to isolate itself from the Kabardino-Balkar Republic. Since then, people in the North Caucasus have suffered through two wars in Chechnya. They are also subject to unending terror by militant nationalists and Islamists as well as the Russian secret service’s – often brutal – anti-terror campaign. Since the rebel leader Doku Umarov proclaimed the Caucasus Emirate in 2007, speedy pacification looks improbable, since religion unifies the once-divided radical energies of the region in the fight against the Russian government. The disastrous suicide attacks in the Moscow Metro in March 2010 effectively laid any doubts to rest.

Save yourself if you can

According to estimates, the two Chechen wars uprooted no fewer than 800,000 of the total of 1.1 million inhabitants.<sup>262</sup> About 100,000 of these fled Chechnya. Most of them settled in neighbouring Ingushetia, the population of which grew by one-fourth in 2000 alone due to this migration.<sup>263</sup> But Ingushetia, which is hardly an oasis of peace, had to shoulder still more refugees: after the former Ingush district of Prigorodny was annexed to the predominantly Christian Republic of North Ossetia in the 1940s, there was continued unrest between the Ossetians and Ingush living in the district. In 1992, the Russian army helped drive a total of 64,000 Ingush over the border into Ingushetia, where many of them still survive in refugee camps in catastrophic conditions. Those who were able to return to the densely populated Prigorodny District were openly rejected by the Ossetian population, who in turn had taken in refugees from the Georgian breakaway province of South Ossetia.<sup>264</sup>

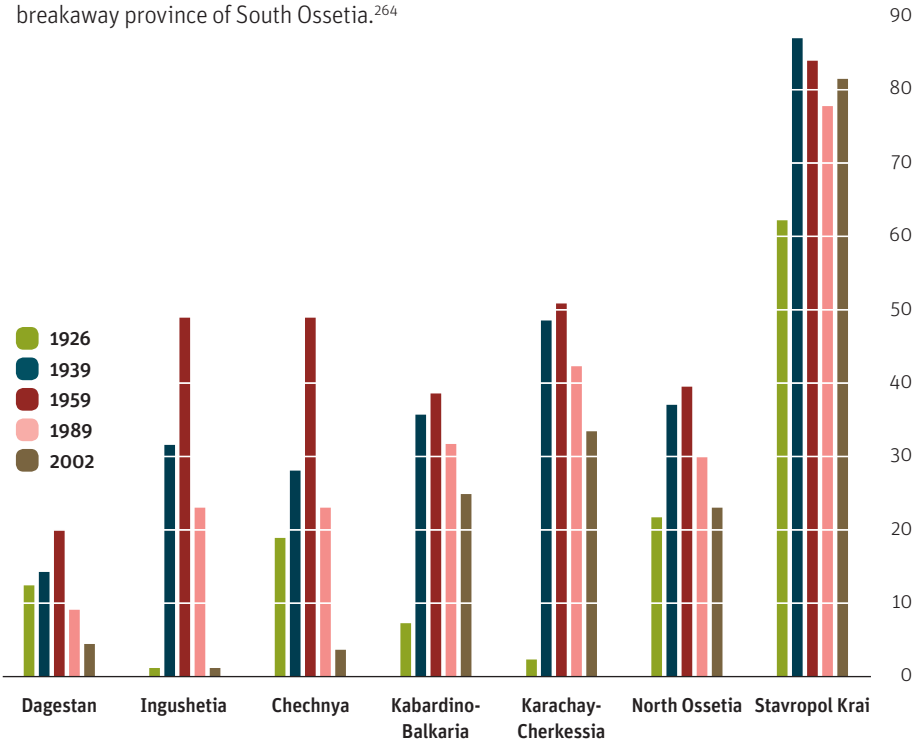
Daily life is dominated by poverty. In Ingushetia, almost 40 percent of the population survive on an income below the existence minimum; in Chechnya, such data are not even recorded.<sup>265</sup> In 2008, Ingushetia’s per capita GDP, converted into 2,700 international dollars, was the lowest in the country. Even the district’s two wealthiest regions, the Republic of North Ossetia and Stavropol Krai, had a GDP of lower than 50 percent of the Russian average of 15,000 dollars in the same year.<sup>266</sup> For many, Moscow’s subsidies, which constitute between 50 and 80 percent of the regional budgets, form the basis of life.<sup>267</sup>

Russification has failed

In the wake of the “Russification” of peripheral territories, the Soviets settled large numbers of Russians in the North Caucasus. Accordingly, their numbers grew among the population of the mountain republics. This settlement reached its peak in roughly 1960.\* Subsequently, many Russians left again, as conflicts with the native population increased. Today, almost no Russians live in Dagestan, Ingushetia or Chechnya. An exception is Stavropol Krai, which already served as a Slavic bulwark against Caucasian peoples in the 18<sup>th</sup> century. In the 1990s, many Russians migrated here from the federal district’s other republics.

Percentage of ethnic Russians in the total population of the North Caucasus in selected years  
(Source: Demoscope Weekly, Perepisi Naseleniya Rossiyskoy Imperii, SSSR, 15 novykh nezavisimyykh gosudarstv, Moscow)

\* Between 1936 and 1991 Chechnya and Ingushetia together formed the Chechen-Ingush Autonomous Soviet Socialist Republic. Therefore, no separate data are available for the years 1959 and 1989.

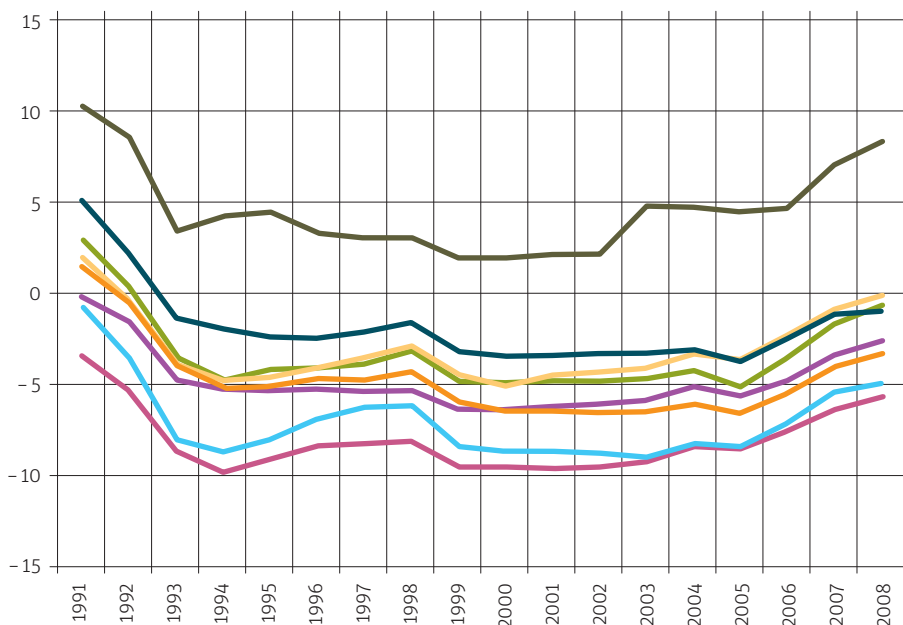




What the North Caucasian republics need most are regional investment programmes. Chechnya's infrastructure has lain in ruins since both wars. The destruction of the three oil refineries has literally robbed the country of its energy. National and international subsidies flow into the reconstruction of basic supply systems and providers such as schools and water pipelines, but these are entirely insufficient: in many of the republic's schools, instruction was still given long after the wars had ended in two or three shifts a day since so many buildings had been destroyed.<sup>268</sup>

Due to the region's high number of children, the situation is becoming more urgent: the average Chechen woman has 3.4 children, the highest average in all of Russia.<sup>269</sup> By 2030, the federal district's population will grow from 9.2 million in 2009 to ten million. In Chechnya, it will even grow by 47 percent from 1.2 to 1.8 million.<sup>270</sup> Dagestan and Ingushetia will also grow rapidly while the other regions will begin shrinking in 2020. To prevent all of these children from falling into the hands of extremist groups, they need educational and work opportunities. At the moment, neither one of these is possible. The number of students is significantly smaller here than in the rest of the country – not even half as many in Chechnya and Ingushetia – and unemployment is particularly widespread among youth.<sup>271</sup>

That the percentage of highly-qualified people among Ingushetia's employed population, at 40 percent, far exceeds the national average, has less to do with the fact that there are many highly-qualified people than with the fact that only one in five inhabitants of working-age has a regular job. Thus, while the North Caucasus is only home to one in 15 inhabitants of the Russian Federation, every seventh unemployed person lives here.<sup>272</sup> Those who have work are frequently employed by the state. But a job here is often only possible if you pay several thousand dollars. The majority of the population works in the shadow economy, which, in Dagestan, is estimated to constitute up to 70 percent of all economic activity.<sup>273</sup>



**Natural population growth per 1,000 inhabitants in Russia's federal districts, 1991 to 2008**  
(Source: Rosstat, Tsentralnaya Baza Statisticheskikh Danykh, Moscow)

## Birth surplus in the North Caucasus

While Russia's population is shrinking steadily, significantly more people are born than die in the North Caucasus. In 2008, the population grew by 0.8 percent due exclusively to a surplus in births. In Chechnya, there were about 36,000 births for approximately 5,500 deaths, which is equivalent to a population increase of 2.5 percent.\*

- North Caucasus
- Urals
- Siberia
- Far East
- Southern Russia
- Volga
- Northwest Russia
- Central Russia

\* No data are available for Ingushetia for the period from 1991 to 1994 and for Chechnya from 1993 to 2002. As these are the republics with the highest birth surpluses in the region and the whole of Russia, natural population growth in the North Caucasus between 1991 and 2002 was higher than indicated in the graph despite the two wars in Chechnya.

# VOLGA Federal District

Population in 2010	30.11 million
Population in 2030 (projection)	26.14 million
Population/km <sup>2</sup> of land in 2010	29
Total fertility rate in 2005-2010	1.50
Life expectancy at birth in 2005-2010	68.5
Annual net migration 2005-2010	26,658
Mean age in 2010	39.0



(Source: see page 139)

## Diversity that works

The “Mother Volga”, as the Russians lovingly call Europe’s longest river, arches across 3,500 kilometres of the country, the largest section of which is located in the Volga Federal District. The Volga is the artery of life and transportation in a region that has played an enormously important role in Russian and Soviet history. Practically all the major cities in the federal district are situated on the Volga: the district’s capital Nizhny Novgorod, where the river enters the region from the north; Kazan, officially the “Third Capital of Russia” after Moscow and St. Petersburg, and Samara, where the Progress State Research and Production Rocket Space Center manufactures the Soyuz launch vehicles which heaved the first Sputnik into outer space and continues to ferry supplies to the International Space Station (ISS).

Approximately 30 million people live in the Volga region – one-fifth of Russia’s entire population – and its inhabitants are among the most ethnically mixed, second only to the North Caucasian Federal District.<sup>274</sup> It contains six republics named after non-Russian ethnic groups – Tatarstan, Bashkortostan, Mordovia, Udmurtia, Mari

El and Chuvashia. The Mordovians, Udmurt and Mari are Finno-Ugrian peoples and the Bashkirs, Chuvash and Tatars are Turkic. The latter are said to be descendents of Genghis Khan’s Golden Horde. The three Finno-Ugrian peoples are closely associated to the Russian Orthodox Church. The members of the Turkic peoples are of Islamic background – even though many are now atheist following 70 years of Soviet rule. Almost half of the 20 million Russian Muslims live on the Volga. Much like the Russian Orthodox Church, their religion has also boomed in post-Soviet Russia. Just between 1997 and 2008, the number of mosques in the Republic of Tatarstan increased from 700 to more than 1,100.<sup>275</sup>

### Tatarstan – A Muslim role model?

The Tatar capital Kazan is viewed as the Islamic centre of Russia. Many refer to the city as an enlightening example of how people from Muslim and Christian cultural circles can live together constructively. While North Caucasian Russians and Muslims quarrel and clash, one-third of all marriages in Tatarstan involve Tatars of Muslim background and Russians with Christian Orthodox roots.<sup>276</sup> The region is also the

cradle of Jadidism, a progressive offshoot of Islam which began in the 19<sup>th</sup> century. So far fundamentalist undercurrents have had little impact on Tatarstan, because the religious elite are locally educated at the Russian Islamic University in Kazan.

However, Tatarstan is not free of separatist ambitions. In 1990, it was the first Russian region to declare its independence. In 1992, together with Chechnya, its political leaders refused to sign the Federation Treaty with Russia, and when they finally did in 1994, they secured numerous special rights and privileges. Up until 2000, Tatarstan paid very few taxes to the federal budget, maintained its own diplomatic relations with neighbouring states, and made great strides in revitalising Tatar culture and language. At the beginning of his term, Vladimir Putin put an end to most of these concessions. According to observers, the reason why this did not lead to escalating tensions is because Tatarstan had been a part of Russia for centuries, and secondly, the economic crisis in the 1990s had soured the experience of relative autonomy for many Tatars.<sup>277</sup> Politically, Tatarstan may have

## Germans on the Volga

The history of the Volga Germans began in 1763 when the Russian Czarina Catherine the Great invited immigrants to Russia where they would receive 30 hectares of land. She also promised them freedom of religion, self-government and 30 years of tax exemption. In return, they would cultivate the fertile land along Europe's longest river and, should the event occur, protect the country from attacks by neighbouring peoples. The majority of the first 30,000 Germans, who responded to the appeal, came from Hesse, which offered little available land and high taxes.<sup>278</sup> Despite initial hardships, the German immigrants colonised the region along the Volga and their numbers swelled to around 400,000 by the end of the following century. When the first Russian census was taken in 1897, statistics revealed that a total of 1.8 million German native speakers were living in the Russian Empire. The majority of these lived along the Volga at the time. There were also large German immigrant communities on the Black Sea and in the Caucasus and Volhynia (present-day Ukraine). Other German-speaking immigrants were living in former Russian Poland and the Baltic regions.<sup>279</sup>

As the Czarist Empire came to an end, and especially with the onset of the First World War and the October Revolution in 1917, the Russian Germans lost their privileges. However, they did benefit from Lenin's Nationality Policy, which allowed them to establish their own Volga German Autonomous Soviet Socialist Republic in 1924. The republic existed until 1941, at which time Nazi Germany attacked the Soviet Union and all Germans were decried as Enemies of the People. Within weeks, most Russian Germans were deported eastward to Novosibirsk and Omsk, the Altai region and Kazakhstan. There, they were forced to work under catastrophic conditions in the "Trudarmee" (work army), which was little more than a death sentence for many thousands of deportees.<sup>280</sup>

Although the Germans were exonerated from collaborating with the Nazis following the war, they were not permitted to return home and their property remained confiscated. Consequently, less than one-fifth of all Russian Germans were located in the European part of the Soviet Union in 1979 – compared with half in 1926. Haunted by their time in work camps and faced with ubiquitous prejudice, more and more Russian Germans assimilated to the Russian-speaking majority. However, their designation as "German" was required in Soviet passports until the fall of the Iron Curtain. According to the 2002 census data, some 600,000 citizens of German descent were still living in Russia after about two million Russian Germans – and their families – immigrated back to Germany in the first ten years following the collapse of the Soviet Union.<sup>281</sup> In 2002, Germans comprised only 0.2 percent of the population in the Volga Federal District.<sup>282</sup>

lost its concessions, but in return received enormous amounts of regional development funding even though it is one of the richest regions in the country.<sup>283</sup> Tatarstan officially regained special status in 2007, although the degree of autonomy is now less pronounced as many of its laws have been harmonised with Moscow's.<sup>284</sup>

In 2008, each of the 3.8 million inhabitants earned about 16,000 international dollars on average. Tatarstan's per capita income is among the highest in the country, surpassed only by inhabitants of Moscow and the resource-rich regions of Tyumen, Sakhalin and Chukotka. A substantial portion of Tatarstan's wealth derives from one important natural resource – crude oil. With 30 million tonnes extracted each year,

Tatarstan is one of the country's largest oil producers, second only to Tyumen Oblast in the Urals.<sup>285</sup> For years, the Tatars have invested a significant portion of their oil revenues into the agricultural sector, which has helped lessen income disparities between urban and rural dwellers. Thanks to the revenues generated by the oil, engineering and chemical industries, Tatarstan has a relatively low poverty and unemployment rate. There is some concern, however, about the region's sovereign debt which soared during the recent financial crisis. It has made Tatarstan one of the country's most indebted regions in 2010, second only to Moscow and its surrounding region.<sup>286</sup>

Due in part to its strong economy, Tatarstan is demographically stable. Immigration exceeds emigration by 10,000 people each year, which has helped spur population growth in recent years. Because Tatars comprise more than 50 percent of the total population and generally have more children than Russians, the republic boasts a fertility rate of 1.51 children per woman, which is relatively high for such a wealthy region. It may be the result of patriarchal family structures which are still prevalent in Tatarstan.<sup>287</sup> By 2030, the population is expected to shrink by a maximum of six percent – significantly less than all the other regions in the federal district.<sup>288</sup>

## Several growth poles

Unlike Northwest and Central Russia, the Volga does not have just one, but rather several areas that are centres of economic growth. Along with Tatarstan, the oblasts of Orenburg, Samara and Nizhny Novgorod as well as Perm Krai and the Republic of Bashkortostan all have well-developed economic structures. The oil industry plays a key role almost everywhere. Twenty-six million tonnes of crude oil are refined each year in Bashkortostan alone. This region currently produces about one-sixth of all

Russian petrol and diesel fuel.<sup>289</sup> Industrial oil production began in the region in the 1930s – three decades before the first wells were drilled in Western Siberia. Consequently, the oil reserves in the Volga region are gradually dwindling. Annual oil production has fallen from 46 million tonnes in the mid-1960s to just over ten million tonnes today.<sup>290</sup> However, the region has been able to adapt to the changing circumstances through economic diversification. Bashkortostan is not only an industrial region, but also Russia's fourth eastern largest agricultural producer after the southern Russian regions of Krasnodar and Rostov, and its neighbour Tatarstan.<sup>291</sup> Its wide range of products includes grains, meat, dairy products and sugar beets.

Such diverse possibilities are not yet available in Tolyatti in Samara Oblast. This is where AvtoVAZ is located, the largest car manufacturer in Russia by far and home of the infamous Lada. With a population of 720,000, Togliatti is the largest “mono-city” in the territory of the former Soviet Union.<sup>292</sup> Approximately 100,000 people are employed at AvtoVAZ, and before the recent economic crisis, there were almost 30,000 more.<sup>293</sup> The company was able to avoid bankruptcy in 2009 thanks only to a generous bailout by the Russian government. Yet even before the crisis, Russian customers were increasingly rejecting AvtoVAZ models for higher-quality foreign cars. As the decade drew to a close, sales of AvtoVAZ lines had fallen dramatically. If AvtoVAZ had gone bankrupt, not only would it have led to severe social problems in Tolyatti, but would have placed the future of the entire national auto industry at risk. To avert such a disaster, the government responded forcefully; it protected its auto manufacturers by significantly raising import duties on foreign cars. To stimulate demand at home, the government also began its own “Cash for Clunkers” programme, issuing vouchers to those who traded in their old vehicles for new Russian models.

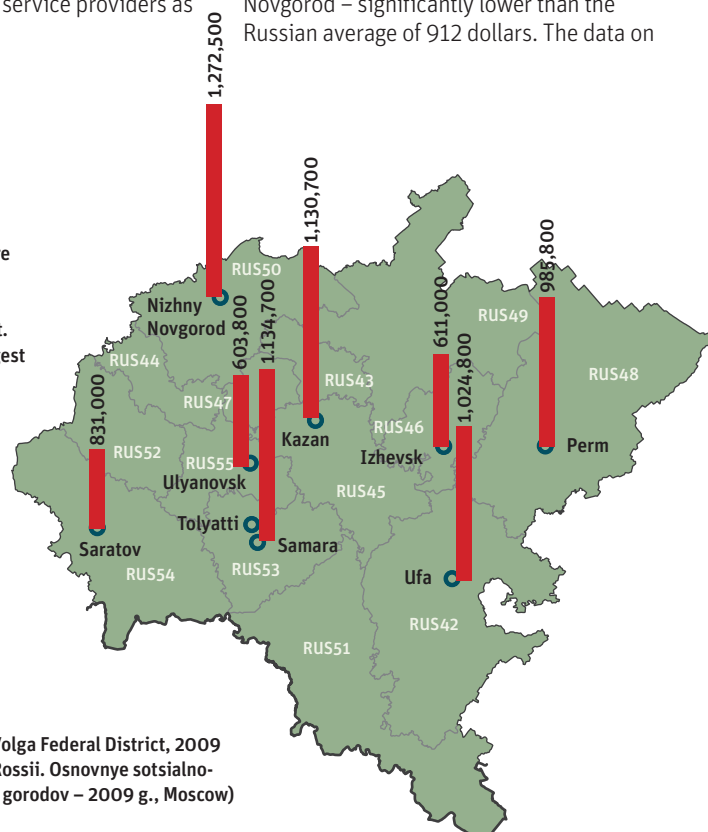
Despite such protectionist measures, the Russian government is still interested in having Western car manufacturers operate in the country in order to profit from their technical know-how. But even this is strictly regulated. For example, Vladimir Putin recently announced that foreign companies, such as Ford in St. Petersburg or Volkswagen in Kaluga, will soon have to add 60 percent of the total value of each car on site, instead of the current 30 percent now required.<sup>294</sup> This did not deter the French-Japanese auto company Renault-Nissan. With its takeover of the Russian investment firm Troika Dialog, it could soon boost its 25-percent stake in AvtoVAZ by another 25 percent, thus securing a majority of shares and control of the company.

Tolyatti also benefits from its proximity to the regional capital of Samara. The entire region is increasingly becoming a gigantic agglomeration, making it an attractive place of business for modern service providers as well.

One step further is the city of Nizhny Novgorod. Because of the importance of its arms industry during the Soviet era, it was all but shut off from the rest of the world. Today, with 1.3 million inhabitants, the city is the fifth largest in Russia and the centre of the IT industry. The American chip manufacturer Intel employs 500 workers here, and local businesses, such as Mera Networks and Telma produce software for the global market. In cooperation with the regional government, these companies invest some 25 billion roubles in R&D each year. This amounts to 3.4 percent of GDP – higher than any other Russian region.<sup>295</sup> Of course, compared to other sectors, software development generates only few jobs. The industrial sector, on the other hand, employs more people – mostly in manufacturing industries and hardly any in natural resource extraction. This contributes to a per capita disposable income of 813 international dollars a month in the region of Nizhny Novgorod – significantly lower than the Russian average of 912 dollars. The data on

### The urban heart of Russia

The Volga Federal District contains nine of Russia's 21 largest cities. All of them are regional capitals except for the car manufacturing city of Tolyatti in Samara Oblast. Nizhny Novgorod is the largest city and district capital with just under 1.3 million inhabitants. During the Soviet era, it was the third largest city in the country after Moscow and Leningrad. Today it ranks fifth in population following Novosibirsk and Yekaterinburg.



Population of cities in the Volga Federal District, 2009  
(Source: Rosstat, Regiony Rossii. Osnovnye sotsialno-ekonomicheskie pokazateli gorodov – 2009 g., Moscow)

population migration seems positive only at first glance, too. The city sees a net increase of 5,000 migrants each year, yet practically all of these are poorly qualified immigrants from abroad. Russians, on the other hand, are leaving the city faster than new ones can replace them. In the entire Volga Federal District, only Tatarstan registered a migration surplus from other regions in Russia in 2009.<sup>296</sup>

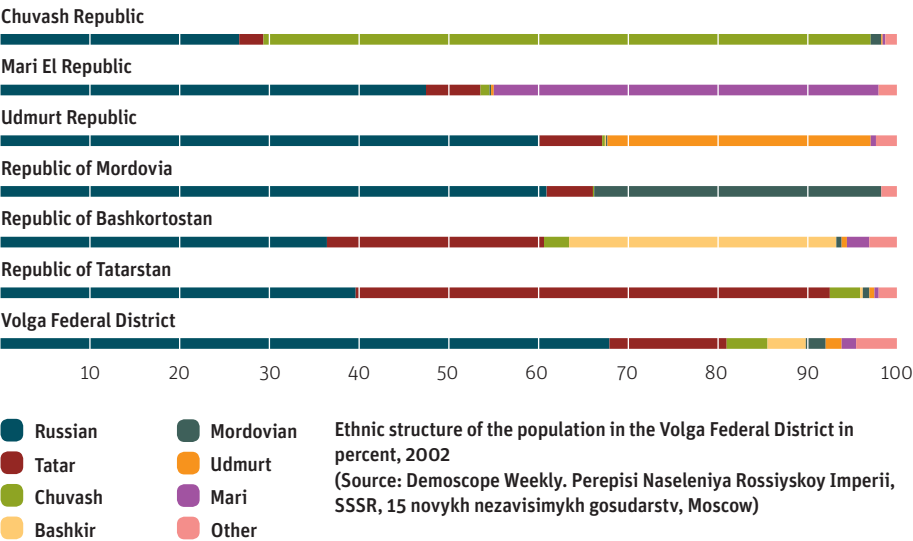
Many regions are worse off than Nizhny Novgorod. For example, Kirov Oblast and the republics of Udmurtia and Mordovia are losing several thousand residents every year through migration. Along with Chuvashia and Mari El, Udmurtia and Mordovia are among the regions on the Volga which have been most strongly impacted by the structural change that followed the Cold War. For example, the arms industry in Udmurtia – home of the legendary Kalashnikov – experienced a severe crisis at the beginning of the 1990s, and a similar situation occurred in the Mari El Republic. In Kirov Oblast, the economic recovery at the start of the millennium did little to revive its three major industrial branches: engineering, chemicals and forestry.<sup>297</sup>

Russians have fewer children

Economic strength is not the only determining factor that will impact population growth in these regions in the future. A large percentage of non-Russian ethnic groups live in many of the district’s republics, and because of their younger age structures, they find themselves in a better position than Nizhny Novgorod, Pensa, Kirov and Saratov Oblasts, which have a larger Russian population. For example, twelve percent of the population in Udmurtia is over 64 years of age, while in Nizhny Novgorod, this group comprises 16 percent. The life expectancy provides no good explanation for

Ethnic diversity

The population in the Volga region is ethnically quite diverse – yet all live together in peaceful coexistence. Russians make up more than two-thirds of the population and more than 50 percent of the inhabitants in just two of the six ethnic republics. The Tatars, at 13 percent of the population, represent the largest minority on the Volga. The most ethnically homogenous republic is Chuvashia where almost 70 percent are of Chuvash descent.



this difference. In line with the nationwide trend, life expectancy in the “more Russian” regions is actually lower than in the ethnic republics – which may be due to the fact that Russians lead an unhealthier lifestyle and have a higher infant mortality rate.<sup>298</sup> The real reason for the difference in age structures can be accounted for by the demographic trend favouring fewer children which began later in the ethnic republics than in the rest of the federal district. As a result, more children are still being born there than in predominantly Russian regions.<sup>299</sup>

Bashkortostan has the highest fertility rate of all the regions on the Volga with 1.69 children per woman, directly followed by the Udmurt Republic with 1.67 children and Perm Krai with 1.61 children per woman. The reason for Perm Krai’s relatively high fertility rate is because its territory includes the formerly autonomous Komi-Permyak Okrug with a rate of over 2.1, thus ensuring

that it will sustain its population level in the long term. At the bottom of the list, there are regions with predominantly ethnic Russians, e.g. Saratov, Ulyanovsk, Pensa, Nizhny Novgorod and the Republic of Mordovia with rates ranging from 1.3 to 1.4 children per woman.<sup>300</sup> By 2030, these regions will see the greatest loss in population with a decrease of up to 23 percent. As for Tatarstan and Bashkortostan, no more than a seven-percent drop in population is expected. These two neighbours are the only regions in the district which have actually seen their population numbers grow since the last Soviet census taken in 1989. The populations of Udmurtia and Chuvashia are also expected to decrease more slowly – a maximum of ten percent – significantly less than the average in the federal district.<sup>301</sup>

## Data for the European part of Russia

		Demography					Economy				Population projection 2010-2030 (percent)
		Cluster	Total fertility rate 2009	Population aged 59 and older 2009 (percentage)	Life expectancy 2009 (years)	Net migration per 1,000 inhabitants (mean 2006-2009)	Cluster	Gross domestic product per capita 2008 (International dollars)	Expenditures on research and development 2008 (percentage of GDP)	Employment 2008 (percentage of age group 15 to 59)	
<b>CENTRAL</b> Federal District											
RUS1	Belgorod Oblast	1	1.37	19.3	71.1	7.4	3	15,219	0.2	66.6	- 3.1
RUS2	Bryansk Oblast	3	1.43	19.6	67.9	- 0.0	3	7,126	0.2	70.0	- 18.5
RUS3	Vladimir Oblast	3	1.43	20.3	66.2	1.2	2	7,901	1.5	73.0	- 19.4
RUS4	Voronezh Oblast	3	1.36	21.5	68.9	2.6	2	8,500	1.1	70.8	- 18.1
RUS5	Ivanovo Oblast	3	1.38	20.7	66.7	1.5	3	5,494	0.4	69.1	- 22.1
RUS6	Kaluga Oblast	3	1.38	20.1	67.6	4.1	2	10,554	3.1	71.6	- 15.8
RUS7	Kostroma Oblast	3	1.52	19.1	67.2	- 0.3	3	8,539	0.0	69.4	- 18.1
RUS8	Kursk Oblast	3	1.44	20.4	68.1	0.5	2	10,343	1.2	77.2	- 20.6
RUS9	Lipetsk Oblast	3	1.44	20.1	68.4	1.7	3	16,602	0.0	70.2	- 16.2
RUS10	Moscow Oblast	1	1.40	19.3	68.2	11.2	2	14,565	2.4	64.9	- 0.6
RUS11	Oryol Oblast	3	1.36	20.1	68.7	1.0	3	8,976	0.2	74.4	- 18.3
RUS12	Ryazan Oblast	3	1.40	22.3	67.7	2.6	3	8,363	0.6	67.6	- 19.8
RUS13	Smolensk Oblast	3	1.39	19.6	65.6	- 0.1	3	8,662	0.5	72.2	- 23.0
RUS14	Tambov Oblast	3	1.28	21.5	68.8	- 0.6	3	7,981	0.6	69.9	- 24.0
RUS15	Tver Oblast	3	1.49	21.3	65.3	2.0	2	9,302	1.4	67.8	- 21.2
RUS16	Tula Oblast	3	1.31	22.6	66.7	2.1	3	10,436	0.6	76.6	- 24.8
RUS17	Yaroslavl Oblast	3	1.39	20.4	68.6	3.1	2	11,540	1.5	76.4	- 15.7
RUS18	Moscow	1	1.41	19.6	73.6	5.1	1	35,401	1.7	91.0	- 7.7
<b>NORTHWESTERN</b> Federal District											
RUS19	Republic of Karelia	3	1.39	16.3	66.6	0.5	3	10,506	0.4	72.8	- 17.4
RUS20	Komi Republic	4	1.49	11.9	66.5	- 7.6	3	16,443	0.5	67.8	- 18.2
RUS21	Arkhangelsk Oblast	4	1.53	15.8	67.6	- 4.1	3	13,270	0.2	69.8	- 18.8
RUS22	Vologda Oblast	3	1.54	17.4	67.3	0.2	3	14,903	0.1	73.6	- 15.0
RUS23	Kaliningrad Oblast	3	1.46	16.8	67.7	4.2	3	11,120	0.3	72.7	- 9.3
RUS24	Leningrad Oblast	1	1.19	19.3	66.7	7.4	2	14,544	0.8	66.2	- 9.9
RUS25	Murmansk Oblast	4	1.35	11.9	67.2	- 6.6	2	12,410	0.9	70.3	- 16.6
RUS26	Novgorod Oblast	3	1.45	20.4	64.5	0.7	3	11,515	0.4	73.3	- 24.1
RUS27	Pskov Oblast	3	1.40	21.0	64.5	- 0.9	3	7,137	0.1	71.4	- 26.4
RUS28	St. Petersburg	1	1.40	20.9	71.2	5.8	2	17,950	3.0	79.7	- 12.6
<b>SOUTHERN</b> Federal District											
RUS29	Republic of Adygeja	3	1.57	18.8	70.0	3.1	4	5,705	0.1	53.1	- 8.0
RUS30	Republic of Kalmykia	4	1.89	11.9	68.6	- 8.5	4	5,262	0.2	58.3	- 7.9
RUS31	Krasnodar Krai	1	1.57	19.2	70.7	5.9	3	10,345	0.4	67.3	- 3.1
RUS32	Astrakhan Oblast	3	1.71	15.3	68.3	3.6	3	10,184	0.2	67.6	- 5.6
RUS33	Volgograd Oblast	3	1.45	19.3	69.5	- 0.5	3	11,185	0.4	72.1	- 14.1
RUS34	Rostov Oblast	3	1.36	19.5	69.5	0.4	2	8,765	0.9	67.7	- 14.3
<b>NORTH CAUCASIAN</b> Federal District											
RUS35	Republic of Dagestan	2	1.96	9.3	74.0	- 2.4	4	5,798	0.3	52.6	11.8
RUS36	Republic of Ingushetia	2	1.97	7.0	78.3	1.1		2,688	0.1	20.2	23.9
RUS37	Kabardino-Balkar Republic	2	1.51	13.5	72.1	- 3.2	4	4,931	0.6	50.7	- 5.8
RUS38	Karachay-Cherkess Republic	2	1.75	15.3	71.5	- 5.3	4	6,068	0.8	58.5	- 10.8
RUS39	Republic of North Ossetia-Alanya	2	1.84	17.6	71.9	- 2.7	3	6,401	0.3	64.6	- 3.9
RUS40	Chechen Republic	5	3.38	6.5	73.2	- 0.8		3,911	0.1	31.4	43.1
RUS41	Stavropol Krai	3	1.43	17.7	70.3	2.2	3	6,418	0.2	67.0	- 6.3
<b>VOLGA</b> Federal District											
RUS42	Republic of Bashkortostan	3	1.69	16.0	69.0	1.0	3	13,451	0.4	67.1	- 7.0
RUS43	Mari El Republic	4	1.54	15.5	67.1	- 1.3	3	7,249	0.2	66.9	- 15.0
RUS44	Republic of Mordovia	3	1.27	18.8	69.1	- 2.5	3	8,604	0.5	68.7	- 22.1
RUS45	Republic of Tatarstan	1	1.51	17.0	70.8	2.9	1	18,250	0.5	71.0	- 6.3
RUS46	Udmurt Republic	4	1.67	15.0	68.3	- 1.9	3	11,652	0.2	72.6	- 10.8
RUS47	Chuvash Republic	3	1.53	16.5	69.0	0.1	3	9,146	0.3	68.5	- 12.8
RUS48	Perm Krai	4	1.61	16.1	66.6	- 1.0	2	13,580	0.9	72.1	- 13.7
RUS49	Kirov Oblast	3	1.45	18.4	67.9	- 2.9	3	7,421	0.4	72.2	- 21.5
RUS50	Nizhny Novgorod Oblast	3	1.40	19.9	67.1	1.7	2	11,309	3.4	78.5	- 18.7
RUS51	Orenburg Oblast	3	1.64	16.4	67.9	- 0.8	3	14,731	0.1	72.7	- 12.8
RUS52	Penza Oblast	3	1.37	20.4	69.4	0.4	2	7,613	1.0	72.3	- 17.5
RUS53	Samara Oblast	3	1.42	18.2	68.2	2.9	2	12,870	1.1	73.3	- 12.4
RUS54	Saratov Oblast	3	1.33	19.3	69.1	0.9	3	9,376	0.5	69.0	- 14.7
RUS55	Ulyanovsk Oblast	3	1.34	18.5	68.8	- 1.2	2	8,312	2.1	67.3	- 20.3



# ASIAN RUSSIA

**URAL** Federal District

**SIBERIAN** Federal District

**FAR EASTERN** Federal District

In the last 150 years, the Asian part of Russia has experienced economic and demographic rise and fall like no other region of the former Soviet Union. While this vast piece of land beyond the Urals had been virtually unpopulated before the Trans-Siberian Railway was built, it quickly became the country's main natural resource site. In the first half of the 20<sup>th</sup> century, Soviet planners sent millions of prisoners to Siberia in order to erect cities and infrastructure as well as to exploit coal, ore and gold reserves. When immeasurable oil and gas reserves were discovered in Western Siberia in the 1960s, Siberia finally became the backbone of the Soviet economy. However, following the



Population change in percentages

1989 (census) until the end of 2009

Beginning of 2010 to the end of 2030

(Source: author's calculations based on Rosstat, Tsentralnaya Baza Statisticheskikh Danykh; Demoscope Weekly. Vsesoyuznaya Perepis Naseleniya 1989 Goda, Moscow)



collapse of the Soviet Union, the fate of the region changed: many industrial enterprises which had once been highly subsidized were no longer competitive due to antiquated production methods and geographic isolation. The gigantic military bases on the Russian Pacific coast became less important following the end of the Cold War. The people who had once been attracted to the inhospitable east by high wages and other benefits now returned to the west in droves, for the climate in Russia's eastern regions is only appealing in the southern area near the Kazakh and Chinese borders. In the north life expectancy reflects the harsh conditions: in Chukotka Autonomous Okrug, men live an average of 54 years.

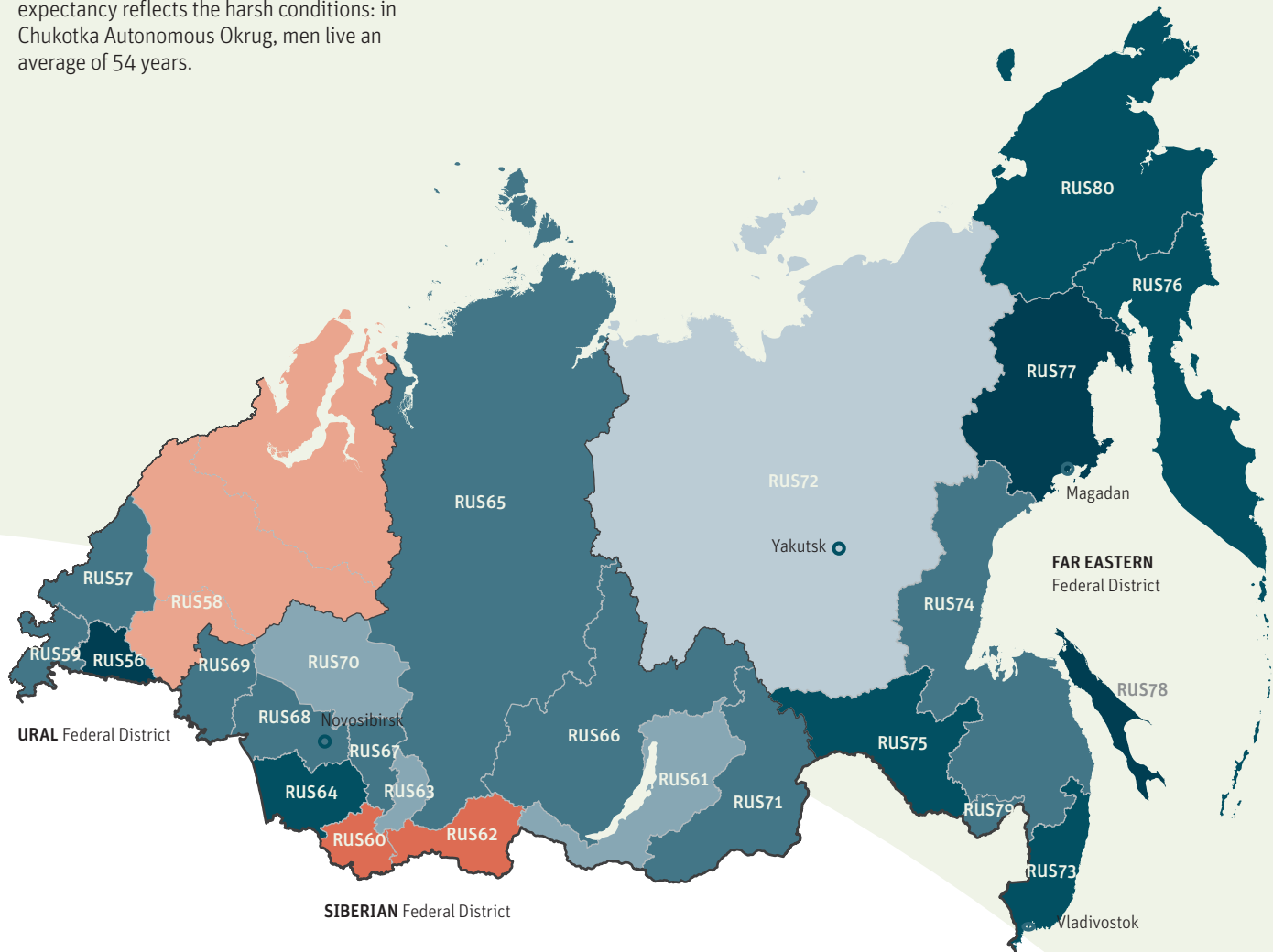
### Russia's east continues to shrink

The population decline in the Asian part of Russia will continue in the future. However, in contrast to the 1990s it will to a great extent be due to the low numbers of children, as the mass emigration of the first decade following the fall of the Soviet Union has already ebbed in the last few years. Even regional centres such as Novosibirsk, Tomsk, Sverdlovsk and Chelyabinsk, which promise good jobs, will not be able to escape shrinkage despite immigration. Growth beyond the Urals can only be expected where oil and gas can be exploited and good jobs beckon, such as in Tyumen Oblast, or where, due to traditional family structures, a lot of children are born, such as in the mountain republics of Altai and Tuva.

Population change from 2010 to 2030 in percentages

- less than - 20
- 20 to under - 15
- 15 to under - 10
- 10 to under - 5
- 5 to under 0
- 0 to under 5
- 5 to under 10
- 10 to under 15

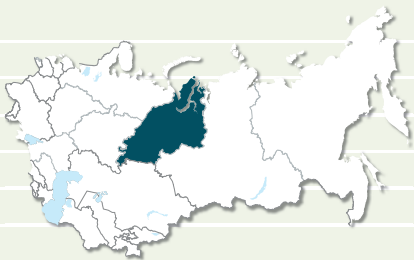
(Source: Rosstat, Tsentralnaya Baza Statisticheskikh Danykh, Moscow)\*



\* The regional population projections for Russia are based on the low variant of national calculations. These correspond most closely to the United Nations' projections used for the other countries.

# URAL Federal District

Population in 2010	12.28 million
Population in 2030 (projection)	11.40 million
Population/km <sup>2</sup> of land in 2010	7
Total fertility rate in 2005-2010	1.62
Life expectancy at birth in 2005-2010	68.6
Annual net migration 2005-2010	15,946
Mean age in 2010	37.8



(Source: see page 139)

## In the land of oil and gas

In 1932, the Russian geologist Ivan Gubkin announced at a conference in Sverdlovsk that beneath the vast, marshy earth of Western Siberia, there must be massive stores of oil and gas from the Mesozoic period. Initially, however, this did not interest anyone: the Republic of Bashkortostan in today's Volga Federal District had just begun with the mining of fossil fuels, which sufficiently supplied needs. It was only after three decades that the fossil fuel industry relocated to Western Siberia, where some of the world's largest oil and gas fields can be found.

In Gubkin's day, poor nomads who traversed the endless tundra and taiga with their reindeer left their mark on the land. In 1930, the Soviet rulers east of the Urals created two autonomous regions for the indigenous population: one for the Yamalo-Nenets and one for the Khanty and Mansi. At the time, only 139,000 people lived in the territory of these two regions, which together comprise a surface area four times the size of Germany.<sup>302</sup>

It was only in the 1960s that the massive exploitation of fossil fuel deposits began. Consequently, the need for labour grew quickly. Hundreds of thousands poured in from all over the country in hopes of work. In the years between 1970 and 1989 alone, the population grew from about 350,000 to just under two million. Many of the new arrivals were Russians and Ukrainians. Khanty, Mansi and Nenets, who once gave the region its name, today constitute less than five percent of the population.<sup>2</sup>

Despite enormous population growth since the mid-1960s, on average there are only seven inhabitants per square kilometre in the Ural Federal District. From the Arctic Ocean to the Kazakh border in the south, the district stretches over more than 2,000 kilometres; from the ridge of the Ural Mountains in the west to the eastern border in the Siberian lowlands over 1,000 kilometres. In total, nine percent of the Russian population live here, generating over 15 percent of GDP. Tyumen Oblast, which includes both autonomous okrugs of the Yamalo-Nenets in the north and the Khanty and Mansi in the south, is, measured by per capita GDP, by far the richest region in the country.<sup>304</sup>

Approximately two-thirds of Russian oil, meaning about seven percent of the world's output, come from Khanty-Mansi Autonomous Okrug.<sup>305</sup> Between six and seven million barrels of crude oil are produced here every day, three times Germany's daily requirements. In 2005, the oil bubbled from a total of 249 sources. It is exploited primarily by the four large enterprises Surgutneftegaz, Lukoil, TNK-BP and the state corporation Rosneft, which together control two-thirds of the national production.<sup>306</sup> Business boomed especially at the beginning of the new century. Between 2000 and 2007, Russian oil production increased by over 50 percent due to exploding world market prices. Following a short period of stagnation, the output in 2009 once again increased and Russia surpassed Saudi Arabia as the world's largest producer.<sup>307</sup>

At the end of 2008, Russia had verified and exploitable oil reserves of some 80 billion barrels, a majority in Western Siberia.<sup>308</sup> If production levels remained steady, the amount would be sufficient to sustain the region's wealth for decades to come. However, the deposits in some of the large fields, which have been exploited since the Soviet era, are beginning to be depleted and tapping new fields in many places is not yet profitable. So it is not saying much when the Russian government boasts of "prognosed reserves" of up to 322 billion barrels; this is the amount of all of the country's theoretically exploitable oil reserves. The numbers do not take the profitability of exploitation, the necessary infrastructure and the question as to whether the world actually wants to exploit each and every tonne into account.<sup>309</sup>

Further north, in Yamalo-Nenets Autonomous Okrug, natural gas plays the role of oil in Khanty-Mansi Autonomous Okrug. Under the permanently frozen ground – the area has an average temperature of minus ten degrees Celsius throughout the year – 90 percent of Russia's natural gas reserves can be found.

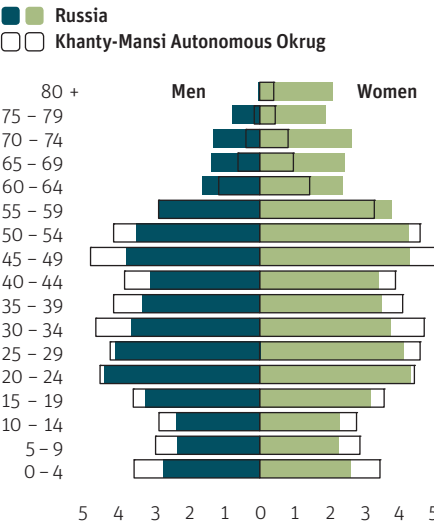
Young industry, young population

The population of Khanty-Mansi Autonomous Okrug is markedly younger than Russia's total average. In particular, the differences among retirees are extreme: only four percent of males in the autonomous region are older than 60; nationwide, the share is 13 percent. As for women, who retire at 55, the difference is hardly less marked – at 15 and 27 percent respectively. The reason for this youthful population structure lies in the mass inflow of labour migrants. This began in the 1970s, when oil production started in Western Siberia. It was only in the last few years that the first migrants reached retirement age.

Russia has the world's largest reserves. Of the approximately 600 billion cubic metres produced nationwide annually, three-fourths are produced here.<sup>310</sup> In contrast to the oil market, the Russian gas market is essentially dominated by a single enterprise: Gazprom. The world's largest gas company controls about 85 percent of the nation's production and, with about half a million employees, it is the country's largest employer. In order to satisfy the steadily growing demand on world markets, Gazprom will need to invest billions of US dollars in the long-term. A large part of the first generation of gas fields, such as Urengoi and Yamburg, has been virtually depleted. The remaining reserves lie much deeper, in the north of the okrug on the Yamal Peninsula and before its coast, which are not easily accessible. An additional difficulty in exploiting these fields is the thawing permafrost, which hinders the construction of stable buildings, roads and pipelines.

In 2009, the volume of output already decreased by 12.1 percent in comparison with the previous year, since European customers were buying less gas than agreed upon due to the economic crisis.<sup>311</sup> For the first time since 2002, Russia lost the position of the world's largest gas producer. The USA replaced it as they had recourse to newly-tapped shale deposits, thereby reducing its own imports. Nonetheless, the significance of gas exports in Russia will grow, especially since gas consumption in the domestic market is still highly subsidized. In order to reduce consumption domestically and to increase lucrative exports accordingly, the government plans to turn increasingly to coal and nuclear power for its energy supplies. By 2030, coal production is supposed to have increased from 100 million tonnes in 2008 to between 410 and 540 million tonnes annually.<sup>312</sup> By 2020, the construction of numerous new nuclear power plants should provide an annual 43 instead of the current 23 gigawatts of nuclear energy.<sup>313</sup>

The public budgets of the autonomous okrugs still number among Russia's highest, even if the sources of revenue have been seriously reduced in the last five years. The regions' previous, 60-percent share of taxes on oil and gas production now flows almost entirely into the federal budget. But revenues from profit and income taxes still generate enough wealth to subsidize poor families with monthly 200 to 300 roubles per child, whereas subsidies are less than 100 roubles in two-thirds of the Russian regions. However, this is still a pittance in comparison with the profits of the oil industry: the sum just manages to cover ten loaves of bread or seven litres of milk. Nonetheless, by Russian standards the eight-percent poverty rate is extremely low.<sup>314</sup>



Population share in terms of five-year age groups in Russia and in Khanty-Mansi Autonomous Okrug in percentages in 2009  
(Source: Rosstat, Tsentrlnaya Baza Statisticheskikh Dannyykh, Moscow, author's calculations)

Russia's Ruhr region

The industrial heart of the Ural Federal District is the oblasts of Chelyabinsk and Sverdlovsk. The former city of Sverdlovsk, which took its earlier name of Yekaterinburg back in 1991, is also the administrative centre of the federal district. It was here that the Bolsheviks executed the family of the Russian Czar Nicholas II. Whereas the city itself is now once again named after a Czar, the territory which belongs to it continues, ironically, to bear the name Yakov Sverdlov, one of the revolutionaries who were responsible for the murder of the last Czar's family.

Russia's "Ruhr region", as Sverdlovsk Oblast is sometimes called, is Russia's third most important industrial region. The aluminium industry is particularly significant. Six large factories produce more than half of all of Russia's aluminium. Chemicals, petrochemicals, steel production, mechanical engineering, the wood and paper industries and the construction material industry are also part of the region's economic basis. In neighbouring Chelyabinsk Oblast, aluminium, pipes, diverse alloys and chromium compounds are produced. During World War II, the city of Chelyabinsk acquired the name Tankograd (tank city), since war tanks

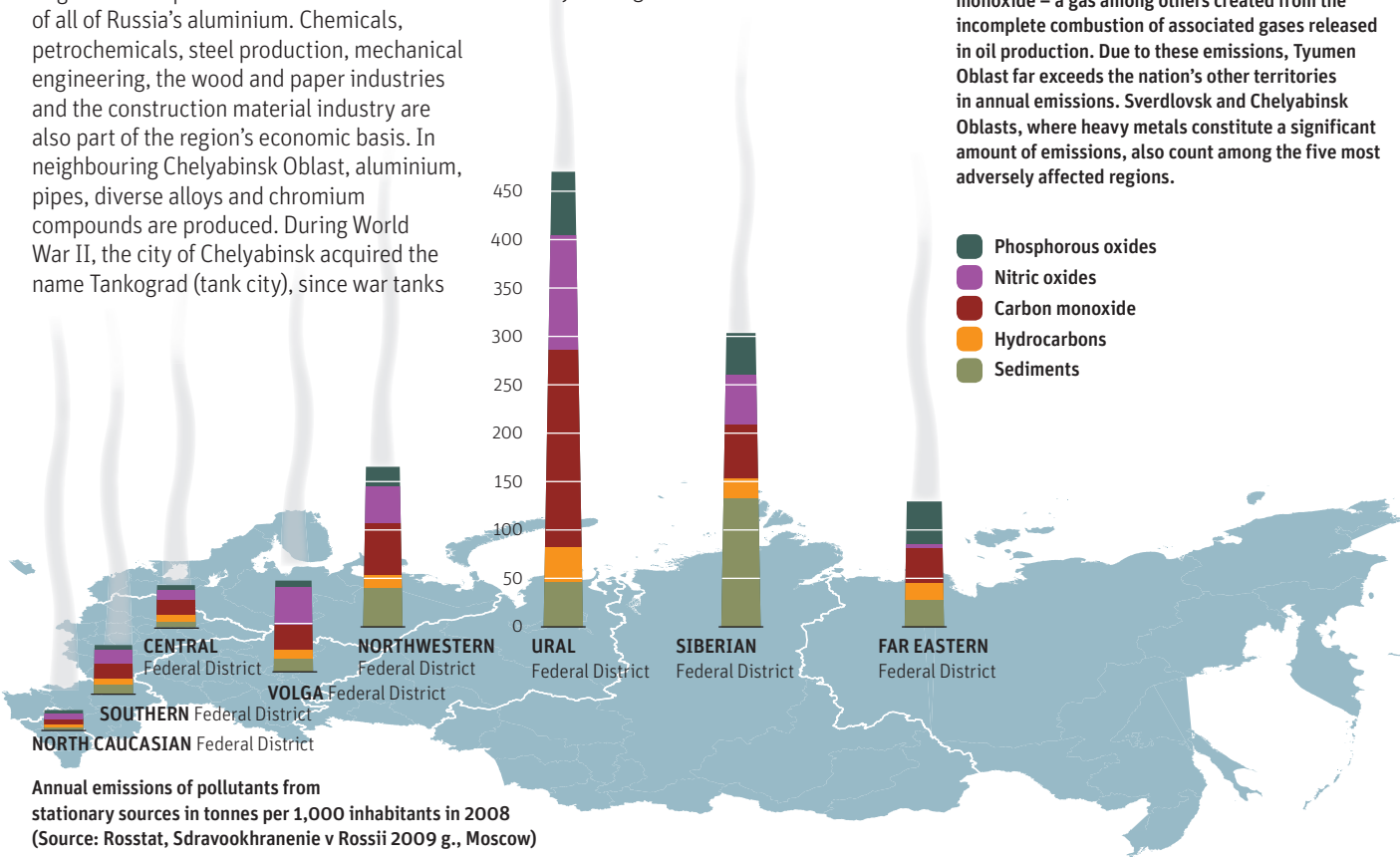
were produced here en masse. After the war, the Mayak nuclear plant in the north of Chelyabinsk Oblast became the main production site for plutonium in the Soviet Union. The Mayak region now counts among the earth's most radioactive places.

The metallurgical industry has allowed the wealth of the oblasts of Chelyabinsk and Sverdlovsk to grow quickly following the Rouble crisis at the end of the 1990s – a time in which the price for metals exploded the world over. But now it is precisely this economic sector which is suffering in particular. Due to weak demand on the world market, industrial production decreased in 2009, compared to the previous year, by 20 percent.<sup>315</sup> In Sverdlovsk Oblast, the number of registered unemployed people increased within one year from 38,000 to 92,000. Furthermore, many firms responded to the crisis by cutting hours.<sup>316</sup>

Despite their wealth in resources, the industrial regions of the Southern Urals depend for production upon additional imports of raw materials. Iron and chromium ore come from Georgia, Turkey or Ukraine and Kazakhstan is an important coal supplier. In order to limit this dependency, Russia is currently planning to exploit the rich iron ore and coal reserves in the polar north of the Ural region with investments of up to 14 billion euros. Until that time, several thousand kilometres of railway lines, roads

Polluted atmosphere

Per inhabitant, about half a tonne of pollutants are emitted into the atmosphere in the Urals every year. More than one-third of this amount is carbon monoxide – a gas among others created from the incomplete combustion of associated gases released in oil production. Due to these emissions, Tyumen Oblast far exceeds the nation's other territories in annual emissions. Sverdlovsk and Chelyabinsk Oblasts, where heavy metals constitute a significant amount of emissions, also count among the five most adversely affected regions.



and electricity wires need to be created from nothing. The construction of four new power plants is also being planned in order to meet energy needs in the newly-established regions.<sup>317</sup>

The people in Kurgan Oblast on the Kazakh border could only dream of such gigantic investments. The region which has no significant raw materials and traditionally focuses on mechanical engineering is at the very bottom of the Urals' economic ladder due to outdated equipment and low demand for its products. Whereas the inhabitants of Tyumen Oblast generated an average of 46,600 international dollars in 2008 – which is equivalent to the economic strength of a Swiss citizen in terms of purchasing power – the inhabitants of Kurgan Oblast, with an annual 7,700 dollars, did not even generate the equivalent of the people in Belize.<sup>318</sup>

### Population growth in the Arctic Circle

As in almost all of Russia's federal districts, the population in the Urals is shrinking. Between 1991 and 2009, the number of inhabitants decreased by about four percent, a loss of about half a million people. But the population decrease did not affect all areas: regions with rich reserves of natural resources long attracted immigrants hoping to find well-paid jobs. This is why the northern autonomous okrugs of the Yamalo-Nenets and the Khanty and Mansi both saw significant population increases in the above-mentioned period. This also led to an increase in the number of inhabitants in the administratively super-ordinate Tyumen Oblast by more than seven percent. But because the economic crisis severely affected the Russian gas industry, Yamalo-Nenets Autonomous Okrug has experienced out-migration in 2008 and 2009; it continues to grow, however, due to a surplus

of births over deaths. The southern oblasts of Chelyabinsk and Sverdlovsk number among the shrinking regions of the Urals. Since 1991, they have lost five and eight percent respectively of their populations. In the federal district, only Kurgan Oblast exceeds these numbers. In 2008, about 150,000 fewer people lived here than in 1991, a loss of 14 percent.<sup>319</sup>

In accordance with the nationwide trend, the total fertility rate in the Urals, which had sunk to 1.2 children per woman in 2000, has stabilized somewhat in the course of the last decade. In 2009, women had an average of 1.62 children. Although this value lies far below the 2.1 children per woman necessary for a stable population development, projections for the Urals until 2030 see only limited further population losses; the population, particularly in the autonomous okrugs in the north, has remained young due to the immigration of young labourers. Forty-eight percent of the inhabitants of the federal district are younger than 35 years old. At the same time, the life expectancy of men at 62.6 and of women at 74.7 years is significantly higher than in other Asian parts of Russia. This lends to a balance between the number of deaths and the number of births. Good wages in the oil industry positively affect both the living standards and life expectancies in the northern okrug of the Yamalo-Nenets in particular. Here, life expectancies of almost 68 years for men and over 75 years for women are among the highest in the country – despite arctic temperatures. Nonetheless, these are still about ten years less than in Germany.<sup>320</sup>

Kurgan Oblast in the south is the only region of the federal district which has experienced consistent out-migration. Consequently, it has been most strongly affected by the demographic decline. By 2030, it could have lost almost a fourth of its inhabitants. And despite immigration, the oblasts of Sverdlovsk and Chelyabinsk will also lose about ten percent of their populations. Tyumen Oblast, by contrast, will probably continue to grow due to its young population structure and continual immigration.<sup>321</sup>

### The other side of the coin

Many social and demographic problems are alleviated by a strong economy, but pollution is not. And it especially affects the former Soviet Union in its economically strong regions. These continue to suffer from the burden of outdated plants, which are often run without any real filter technology and low efficiency. Of the 20 Russian cities with the highest annual pollutant emissions, five are located in the Ural Federal District.<sup>322</sup> The mining of raw materials in Tyumen Oblast has led to the highest emissions of all regions nationwide. And the earth is also affected: every year, there are up to 5,000 leakages in the region's dilapidated pipelines. According to estimates by the environmental organization Greenpeace, between three and seven percent of the transported oil – several million tonnes per annum – seep into the forests, the soil and the groundwater. Over 800,000 hectares of land in Western Siberia are contaminated by oil; this is five times the surface of London.<sup>323</sup>

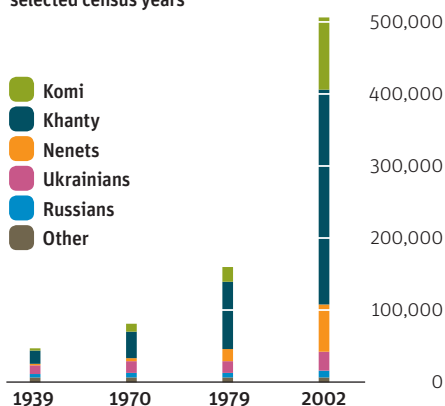
The metal industry, for example in the steel city of Magnitogorsk, also has an enormously negative influence on the environment. In the 1930s, the construction of the city was a Soviet vanity project intended to make clear to the class enemy in the West that the East was equal to the significant steel centres of Gary and Pittsburgh. Over 70 years later, the city is not only known for its successful ice-hockey team, Metallurg Magnitogorsk, but for

its polluted air. Every day, its approximately 400,000 inhabitants breathe toxic chemicals and heavy metals belched into the atmosphere by the city's enormous industrial complexes. An investigation in the 1990s revealed that only 28 percent of newborns and 27 percent of their mothers were healthy. The rest were plagued by bronchitis, asthma, lung cancer and similar afflictions.<sup>324</sup>

## From the majority to the minority

When Soviet planners created Yamalo-Nenets Autonomous Okrug in the 1930s, indigenous peoples constituted over half of the population of 500,000. The group with the highest representation, and thus decisive for naming issues, was the Nenets, accounting for one-third of the population. Throughout the decades, their share shrank to five percent, even though their absolute numbers doubled from 13,000 to 26,000. At the same time, the total number of the district's inhabitants grew to over half a million. The main reason for this development was the discovery of oil and gas in the 1960s, inspiring many Russians, Ukrainians and other ethnic groups to make their way north. These groups now constitute the overwhelming majority of the district's population.

Population of Yamalo-Nenets Autonomous Okrug by ethnicity in selected census years



(Source: Demoscope Weekly, *Perepisi Naseleniya Rosiskoy Imperii, SSSR, 15 novykh nezavisimykh gosudarstv*, Moscow)

## Reindeer breeders

The Nenets constitute Russia's largest indigenous population group. Currently, they number about 40,000 people, with a slightly upward trend. Their home is the tundra on both sides of the Ural Mountains in the autonomous okrugs of the Nenets and the Yamalo-Nenets as well as the north of Krasnoyarsk Krai. A few, the so-called Forest Nenets, are also settled in the taiga of Khanty-Mansi Autonomous Okrug.

The Nenets are a nomadic people. Year after year, they traverse the arctic landscape with their reindeer herds and tents. In summer, they traverse the Arctic Ocean coasts and in winter the forested hinterlands. Fish and the meat, blood and marrow of reindeer are the Nenets' staples. They use the animals' pelts to make tents and clothes and the innards to fashion diverse tools. More than other indigenous peoples, the Nenets have managed to maintain their traditions despite collectivization in the Soviet Union and enormous oil and gas discoveries on their territory.<sup>326</sup>

But modernity has not come to a complete standstill in Russia's far north. The Nenets' children attend boarding schools, learn Russian and are becoming used to the comforts of settled life. Rather than return to the vast tundra, many prefer to look for work in cities after they have completed their education. Natural gas production in the Arctic plays an ambivalent role. On the one hand, the construction of transport and telecommunications infrastructure has made life easier for northern peoples. On the other, the production plants destroy large areas of grazing ground, cut through hiking paths and contaminate the tundra's ground through leaking pipelines. Additionally, immigrants attracted by the production plants do not come with much sympathy for the cultural traditions of the indigenous populations.

Those Nenets who have nonetheless unswervingly maintained their traditional ways benefit little from progress and the relative wealth which have found their way into the autonomous okrugs. Life expectancy is still about 20 years lower than among the rest of the Russian population.<sup>327</sup> Conversely, infant mortality is extremely high. Alcoholism and suicide have become serious problems. According to estimates, there are 134 suicides per 100,000 people annually in Yamalo-Nenets Autonomous Okrug and in the far-eastern homeland of the Koryaks. The critical value established by the World Health Organization is 20.<sup>328</sup>

The greatest health problem in the region, however, is not respiratory illnesses; it is Aids. HIV, which is common in Russia primarily in wealthier regions, is spreading in particular among men of working-age in the urban centres of Yekaterinburg and Chelyabinsk and Khanty-Mansi Autonomous Okrug. In these areas, about a half percent of the population is infected. In contrast to African countries, the virus is not spread primarily by sexual contact but by unclean needles. The number of drug addicts,

about 0.5 percent in the region, is about three times as high as in the rest of the country. The cities in the south of the Urals constitute important terminals for heroin from Afghanistan – and the inhabitants of Russia's resource regions are highly solvent customers.<sup>325</sup>



# SIBERIAN Federal District

Population in 2010	19.56 million
Population in 2030 (projection)	17.46 million
Population/km <sup>2</sup> of land in 2010	4
Total fertility rate in 2005-2010	1.64
Life expectancy at birth in 2005-2010	67.0
Annual net migration 2005-2010	14,396
Mean age in 2010	37.4



(Source: see page 139)

## The Trans-Siberian Railway: Siberia's lifeline

A trip on the Trans-Siberian Railway has always been considered the ultimate adventure for travelers to Russia. The journey itself is the reward: during the 150 hour trip from Yaroslavl train station in Moscow to Vladivostok, virtually nothing happens. Outside the windows, there is a kind of unending film of birch and pine forest in the Siberian taiga, interrupted only seldom by a scene of a large, gray industrial city with ominously smoking chimney stacks or the silver-blue surface of Lake Baikal.

Yet the myth of the „Trans-Siberian“ has been become somewhat tarnished: since 2010, the Russian railway corporation RZD has offered the trip virtually in cooperation with the Internet search engine Google. Since then, a ride on the world's longest transport route can be taken at home while sitting on the couch.

Initially, construction of the railway, which at 9,288 kilometres exceeds the distance between Cairo and Cape Town by about 2,000 kilometres, was designed for purely economic rather than touristic purposes. In order to economically exploit Siberia, which was blessed with rich natural resources, new kinds of transportation were required in the second half of the 19<sup>th</sup> century. Transport by land, usually by horse-driven vehicles, was difficult. Furthermore, only small volumes of goods could be transported. Travel by water was equally unsuitable as Russia's large rivers flow along the North-South axis, rather than eastwards or westwards.

In 1891, construction of a railway line connecting the European part of Russia with the Pacific coast seven time zones away finally began. The first trains traveled to Irkutsk even before the turn of the century. Shortly thereafter, they went further east to Chita and Khabarovsk. Soon, in the wake of the Stolypin agrarian reforms, millions of farmers settled along the railway line and exported their goods, primarily butter and grain, to Central Russia and Western Europe. The cities of Omsk and Novosibirsk – then Novonikolayevsk – became trading centres and important financial markets. Industrialization of the land also profited from the Trans-Siberian Railway. Hard coal-

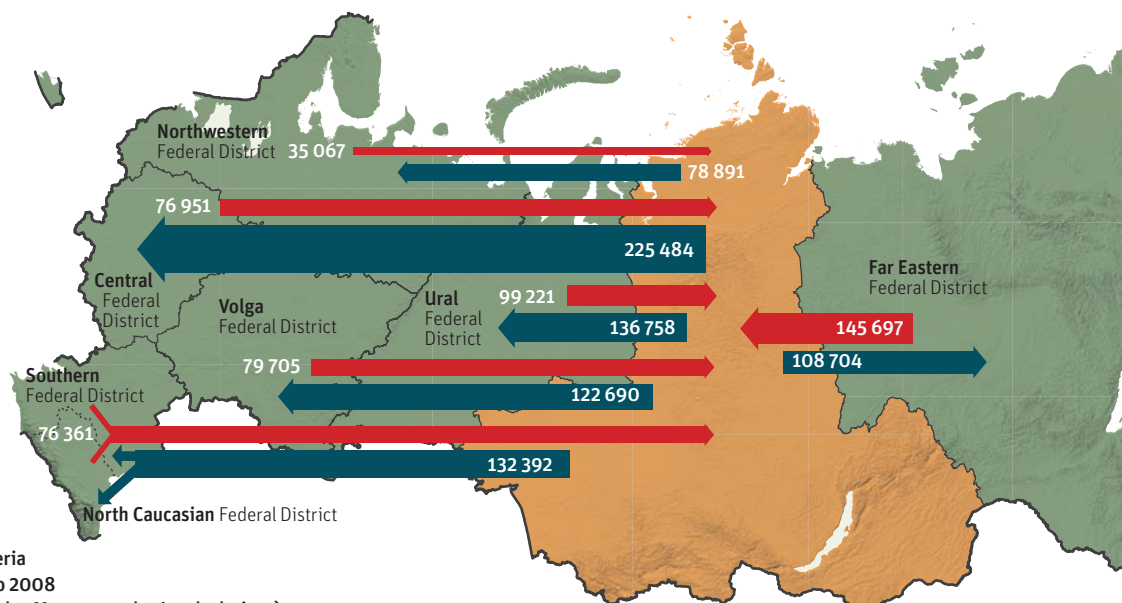
mining began in the Kuznetsk Basin in today's Kemerovo Oblast. Coal-mining in Kemerovo still accounts for 56 percent of Russia's total coal production.<sup>329</sup>

But the Russian rulers did not only build the Trans-Siberian Railway to transport goods: both the Czar and the Bolsheviks sent millions of forced labourers, and later, prisoners of war, eastwards. These labourers contributed significantly to the development of Siberia's industries. After the Soviet government had evacuated important industries from the country's endangered western region to today's Ural and Siberian Federal Districts during World War II, the region ultimately became the Soviet Union's industrial core. This led to marked population growth. Whereas in 1939, the year in which the last pre-war census was taken, about 12.7 million people lived in today's Siberian Federal District, in 1959 the region already had over 15.5 million inhabitants. By 1990, the number had increased to 21.1 million. When the Soviet Union fell, however, the population began to decrease gradually but inexorably, so that today the federal district only has about 19.5 million inhabitants.<sup>330</sup>



## Going West

Every year, Siberia loses inhabitants to all western federal districts. Siberia only remains a popular destination for migrants from the Far East, even if it is only a temporary stop on the way to the country's European centre. The East-West movement started right after the fall of the Soviet Union, when absolute migration numbers surpassed today's several-fold. Due to massive immigration from the Far East, a few regions, such as Novosibirsk Oblast, were able to compensate for the wave of westward emigration in the 1990s. Meanwhile, the number of immigrants is no longer sufficient to make up for the loss.



Cumulative population exchange between Siberia and the other Russian federal districts, 1998 to 2008  
(Source: Rosstat, several demographic yearbooks, Moscow, author's calculations)

Settlement still takes place along the Trans-Siberian route, which traverses seven of the district's twelve regions and constitutes the life-blood of the Siberian economy. Virtually all significant cities such as Omsk, Novosibirsk, Krasnoyarsk and Irkutsk are connected to the railway, which is supported by the Baikal Amur Mainline (BAM) running north and parallel to it. The BAM was completed in 1989 and forks off from the Trans-Siberian Railway in Tajschet, running on for over 4,000 kilometres to the coast opposite Sakhalin island. Construction of the BAM had already begun in the 1930s under Stalin, who needed an alternative route to the Trans-Siberian, which was especially vulnerable due to its proximity to the Chinese border. Economic considerations were of secondary importance. Indeed, in the 20 years following its opening, the BAM stretch by no means achieved the economic significance of the Trans-Siberian Railway.

Regions which remained cut-off from the railway when the country was developed lead a shadow existence today. The sparsely settled republics of Altai and Tuva on the mountainous southern margin of Siberia are among Russia's poorest and most underdeveloped regions. Their GDP of just over 5,000 international dollars per capita is only about a third of the Russian average and is generated to a comparatively great extent in the fields. In order to promote the economic development of both mountain republics, they are to be connected for the first time to the railway in the wake of the planned expansion of the Russian railway system by 2030.<sup>331</sup>

## Transit station

While the picturesque landscape of the mountainous Altai and Tuva Republics, replete with lakes, could very well profit in the future from tourists from the West, Siberian villages which are already connected to the railway system have had to deal increasingly with migrants from the eastern parts of the country since 1991. The extensive East-West migration of the

Russian population, which commenced immediately following the fall of the Soviet Union, has turned Siberia into a collecting point for migrants. Migrants from the Far East often try to gain a foothold in cities such as Novosibirsk, Tomsk, Irkutsk or Krasnoyarsk just as the already-settled population seeks to go west. Thus, Siberia has experienced immigration from the far eastern regions of Russia for several years while the balance with all western areas is negative, significantly exceeding eastern gains.<sup>332</sup> In total, Russia's second-largest federal district has lost about 430,000 people to other Russian provinces since 1993.<sup>333</sup>

That Siberia's net migration, with a minus of about 4,000 people since 1993, is nonetheless minimal, is due to foreign immigrants. These are primarily Russians and Russian-speaking peoples who have returned to the country of their ancestors mainly from Central Asia.

It is the northern and eastern regions of Siberia in particular which are losing inhabitants, as no immigrants from abroad are counterbalancing the population loss to the country's western regions. Thus, both Evenk and Taimyr Autonomous Okrug, which have been incorporated into Krasnoyarsk Krai meanwhile, have lost about a fourth of their populations due to out-migration. And even the Republic of Buryatia and Zabaykalsky Krai, which border to the south China and Mongolia respectively, have lost more than five percent of their populations to emigration since 1993. By contrast, the regions bordering Central Asia, in particular, have experienced population increases: Novosibirsk Oblast has grown by almost five percent, with approximately 130,000 additional inhabitants. Kemerovo Oblast has attracted just about 80,000 people, which constitutes an increase of 2.5 percent. The development in Altai Krai, located directly on the border of Kazakhstan, is characteristic of the population fluctuations. It had a migration surplus of over 70,000 people between 1993 and 2000, before the number of Russian immigrants from Central Asia began slowly to decrease. Since then, the region has lost more than 50,000 people.<sup>334</sup>

That Siberia has lost over 1.5 million people since 1991 can be attributed almost entirely to natural population developments. As everywhere else in Russia, the upheaval of the transition period also stopped many women in Siberia from having children while the lack of prospects and the risky lifestyle of many men contributed to a significant increase in mortality rates. In contrast to emigration, the decrease in birth rates was marked in all regions of the federal district. At the turn of the century, Novosibirsk, Omsk and Tomsk Oblasts had the lowest fertility rates, with fewer than 1.2 children per woman, although women in these industrial regions had already been having comparatively fewer children during the Soviet era. On a percentage basis, the decrease in fertility was strongest in Zabaykalsky Krai. Since this region also suffers from emigration, it has had to deal with the greatest population loss: over 15 percent since 1991.<sup>335</sup>

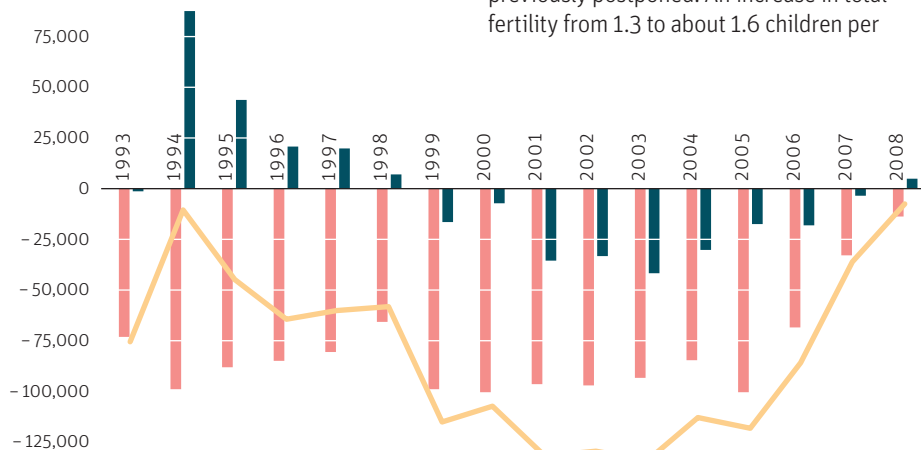
In line with the nationwide trend towards somewhat higher fertility rates, the situation in Siberia has eased a bit. In 2009, for the first time in 17 years, more births than deaths were registered. It is the over-24s above all who are now starting families which they had previously postponed. An increase in total fertility from 1.3 to about 1.6 children per

woman between 2005 and 2009 in Siberia was the largest among Russia's eight federal districts. The crude birth rate increased in the same period from 11.4 to 13.7 newborns per 1,000 inhabitants, despite the fact that the number of women of childbearing age between 15 and 44 years old slightly decreased in proportion to the total population.<sup>336</sup> This, as well as an increasing life expectancy, which is currently 67 years in Siberia or more than four years higher than it was in 2005, point to improved living conditions. Men, in particular, profit from this development. Their average life expectancy has increased from 56.3 to 61.0, which is nonetheless less than male life expectancy in Bolivia or Mongolia.<sup>337</sup>

Since the positive natural population developments were accompanied by the first migration surplus in a decade in 2008, half of the Siberian regions had a higher number of inhabitants at the beginning of 2009 than they had had a year earlier.<sup>338</sup> The positive migration balance can also be explained by the fact that emigration to Germany has markedly decreased in the last several years.

### Mortality surplus explains population decrease

Between 1993 and 2008, the number of deaths exceeded the number of births in Siberia. Until 2005, this cost the federal district an average of more than 60,000 people annually, thus constituting the bulk of the population decrease. Since 2006, the figures have somewhat improved as women in all age-groups are having more children. Contrary to birth and death numbers, emigration and immigration have almost achieved a balance since 1993. In the 1990s, Siberia profited from thousands of Russians returning from Central Asia, of whom many passed the border at this point. Since 2004, there is once again an upward trend. One reason for this is that out-migration of ethnic Germans has almost come to a standstill.



Net migration, natural population growth (births minus deaths) and total population growth in Siberia, 1993 to 2008  
(Source: Rosstat, Tsentrlnaya Baza Statisticheskikh Danykh, Moscow, author's calculations)

- Natural population growth
- Net migration
- Total population growth

The reservoir of ethnic Germans from the Omsk and Altai regions has slowly been drained as this group has been returning since the 1990s to their ancestral homeland.

Nonetheless, current developments are by no means sustainable. Even slight increases in immigration and fertility will not prevent Siberia's long-term shrinkage. The number of children per woman was too low in the 1990s and it remains so. Currently, Siberia profits from a population structure with a large percentage of women of childbearing age. They constitute 23.5 percent of the total population, which is even higher than the already-high nationwide average of 22.8 percent. By comparison: In Germany, where the number of children has decreased significantly since the 1970s, 15 to 44-year-old women constitute a mere 18.5 percent

of the population.<sup>340</sup> However, also in Siberia, the small cohorts of the 1990s will soon reach childbearing age and reduce the number of potential parents significantly.

### Highly-qualified Siberians

In order to maintain population stability long-term, the federal district needs to attract many more immigrants than it has so far. The experience of Novosibirsk Oblast has shown that it will be difficult to attract highly-qualified immigrants to advance the modernization of the economy. This is the site of Akademgorodok, something of an academics' colony and a centre of Russian science. About 40 research institutes employ an estimated 22,000 researchers. In its Soviet heyday, there were three

times as many.<sup>341</sup> The Budker Institute for Nuclear Physics, among others, became world renown. Today, the Russian "Silicon Valley" is particularly interesting for western companies in the field of information technologies. Corporations such as Intel, IBM and Microsoft have part of their programming done here. Despite the emigration of many scientists to Moscow and western countries, there is no dearth of young scholars, for Akademgorodok attracts students from all over Russia. To make sure that the most recent boom does not simply dissipate, the Russian government, in 2005, ordered the construction of a technology park on 9,000 square kilometres which should provide space for 40 firms from the fields of biotechnology, mechanical engineering and information technology.<sup>342</sup>

In order to stem emigration of highly-qualified people and to solve one of the cardinal problems the country faces on its path to modernization, the Russian government has significantly expanded its financial support of scientific organizations in the last several years. But Russia cannot solve the problem on its own, as private enterprises are not yet sufficiently integrated into science. The private sector in Germany, for example, contributes 70 percent to expenditures for research and development, in Russia only 30.<sup>343</sup>

Tomsk Oblast has developed astonishingly well. Its GDP per capita constitutes more than 14,400 international dollars.<sup>344</sup> In Siberia, only the resource-rich region of Krasnoyarsk and Kemerovo Oblast exceed it. Tomsk has mastered the balance between oil and natural gas production and the development of a knowledge-intensive service economy. In the west of the primarily swampy territory, drilling takes place in the off-shoots of the large oil fields of neighbouring Khanty-Mansi Autonomous Okrug while the inhabitants of the cities in the south-east frequently work

### Re-Centralization

In recent years, the Kremlin has pursued a strategy of reducing the number of Russian regions. Generally, economically weak regions are merged with stronger bordering regions. The latter are viewed as engines to jump-start economic development in the weaker areas, which are frequently autonomous regions with ethnic minorities. The capital in the "mother region," for example, should make infrastructural projects possible in poorer regions. The government further hopes that mergers will increase administrative efficiency and that the enlarged labour market will generate more jobs.

Accordingly, on 1 January 2007, the government merged Evenk and Taimyr Autonomous Okrugs with Krasnoyarsk Krai in Siberia, where many regions have particular difficulties pursuing sustainable development due to their isolation and the extreme climate. Later, Irkutsk Oblast incorporated Ust-Orda Buryat Autonomous Okrug, while Zabaykalsky Krai was created by merging Chita Oblast and Agin-Buryat Autonomous Okrug.

The mother region must be in an economic position, however, to help the smaller region if these mergers are to produce the desired results. In Krasnoyarsk Krai, the merger has been positive because the annexation of the two autonomous districts created access to oil and natural gas resources. The opposite is the case in Zabaykalsky Krai, where the actual engine, Chita Oblast, is economically battered and hardly in a position to take care of its junior partner, Agin-Buryat Autonomous Okrug. The Russian government has not yet taken these regional problems into consideration when pursuing mergers. Apparently, it is satisfied that each merger deletes a backwards region from the official statistics and regional inequality seems to shrink.<sup>345</sup>



## Not enough work in the South

Next to the North Caucasus, Siberia is the only federal district in which unemployment is higher in all regions than the Russian average, which was 8.4 percent in 2009. It is particularly difficult to find work in the Altai mountain region and east of Lake Baikal. Young people, above all, have few prospects. In the Tuva Republic, where high fertility rates traditionally ensure a continuously growing stock of new labour, over a fourth of 20 to 29-year-olds are unemployed. Only the Caucasian republics of Chechnya and Ingushetia have higher rates.

as researchers and developers. In proportion to the number of inhabitants, more patent applications are registered annually than in all other regions of the country, with the exception of the cities of Moscow and St. Petersburg.<sup>346</sup>

Among other things, Tomsk has profited from the fact that it won a tender by the Russian government in 2005 to establish a special economic zone of technology-innovative type. The tax on profits in such a zone is only 16 rather than 20 percent and social security contributions constitute 14 rather than 25 percent. Furthermore, corporations do not have to pay any real estate tax and they get back their value added tax. With 18 similar zones, the Kremlin gives various locations a chance to exploit their own potential in, among others, industry, tourism or trade by providing the most advantageous conditions as possible to private corporations.

The focus in the special economic zone of Tomsk, whose special conditions are limited, like all other economic zones, to 20 years, is materials research and nanotechnology. Geographically, the zone is divided into two parts: the northern part borders the premises of the Tomskneftekhim company, a nationally leading petrochemical enterprise and is thus located at the crossroads of research-intensive production in the region. The larger southern part of the zone is in the immediate neighbourhood of the Tomsk section of the Russian Academy of Sciences just west of the city.

## Soviet legacies

Both Novosibirsk and Tomsk have profited from their location on the most important East-West traffic artery and their relative proximity to the European part of the country. Together with the very fertile land, these factors have resulted in a relatively high level of economic diversification in both regions as well as in the oblasts of Omsk and Kemerovo. Elsewhere, the regions often developed only when raw material seemed to make development profitable, even at human or environmental cost.

The effects of Soviet industrial policy on health can be observed in Norilsk, the world's northernmost and coldest large city, which has profited from its proximity to the Yenisey River. Built and operated by prisoners of the Norilsk gulag in the 1930s, the city quickly developed to become a centre of the heavy metal industry in the Soviet Union. The "Norilsk Combine" first achieved international significance, however, in the 1960s, when newly-discovered nickel reserves made it possible to increase production tenfold within 20 years from 20,000 to 200,000 tonnes annually and to export a significant amount to the West.<sup>347</sup> That the mining and smelting of nickel, copper and cobalt released several million tonnes of toxic gases annually which rained down upon the city and the surroundings bothered but few of those in power during the Soviet era.

Today, the successor corporation MMC Norilsk Nickel still provides 80 percent of all employment in the city, despite a consolidation period in the 1990s in which half of all employees lost their jobs.<sup>348</sup> With just about 20 percent of the nickel and 13 percent of the palladium mining globally, it is a two-fold market leader.<sup>349</sup> In addition, the company maintains the world's largest

complex for the smelting of heavy metals. The corporation's smoke stacks still emit 500 tonnes of copper and nickel oxide respectively as well as two million tonnes of carbon dioxide annually. At least Norilsk Nickel invested several million US dollars in its exhaust systems in 2006 and is planning to reduce carbon dioxide emissions to 400 tonnes annually by 2015.<sup>350</sup>

## Pollution endangers livelihoods

As a result of extreme pollution, which leads primarily to respiratory illnesses, the life-expectancy of factory workers is ten years lower than the Russian average. The city regularly finds itself among the world's ten most polluted places in the world in a list drafted by New York's Blacksmith Institute.<sup>351</sup> That Norilsk's inhabitants do not leave in greater numbers than they currently do is owing to a high average monthly wage, which, converted, amounts to 2,100 international dollars.<sup>352</sup> Since social benefits are also correspondingly high, Norilsk was a popular place for migrants, in particular for Central Asians and Southern Caucasians. Since 2001, this has changed: under pressure by the city's administration and Norilsk Nickel, the then Russian prime minister Kasyanov closed the city to foreigners.<sup>353</sup>

The elderly, in particular, who have for decades been breathing toxic air, suffer from pollution. Diverse programmes to resettle the population, which would enable pensioners and the unemployed to move away from the inhospitable city, have so far failed.<sup>354</sup> The financial support is frequently insufficient and most people stay in Norilsk because their families are there.<sup>355</sup>

The region around Lake Baikal is much more attractive. It lies in the southeast of the federal district. With 23,000 cubic kilometres of fresh water, the Baikal contains more than all of America's Great Lakes taken together. In terms of surface, it is only the world's seventh-largest lake, but at 1,620 metres, it is by far the deepest. And in contrast to other deep lakes in which the lowest depths contain no oxygen or biological life, the ground of the Baikal is home to a unique if fragile fauna.

For the approximately one million inhabitants of the Baikal region, the lake constitutes an important basis of life. But amidst the solitude, a battle between the environment and industry is being waged which the latter has usually won in the past. The industrialization of the area began after World War II, when the newly-constructed railway permitted access to the lake to visitors and workers from the European part of the country. Above all, the pulp and paper mill in Baykalsk founded in 1966 which supplies, among other things, the defence industry, was a major polluter: the factory dumped about 100,000 cubic metres of unfiltered toxic sewage in the lake daily.<sup>356</sup>

In 2008, following a protracted legal battle, it seemed that environmental activists would succeed in shutting down the factory. The environmental protection authorities required the company to install a closed water circuit in order to stop the flow of pollutants. Because the requirements, in combination with sinking prices during the economic crisis, made business unprofitable, the Baikal TsBK temporarily closed its doors in October 2008. Not two years later, however, Vladimir Putin signed a declaration permitting the production of pulp and paper without a closed water circuit. According to the official version, the prime minister had personally inspected the water by mini submarine and could attest to its cleanliness.

But the trip to the earth's deepest lake was probably not the only reason for Putin's decision. Baykalsk is the incarnation of one of post-Communist Russia's most sensitive topics, namely the future of about 450 so-called mono-cities which were built around single factories during the industrialization of the Soviet Union. Today, the existence of many of these cities is threatened since the life-sustaining corporations, with their outdated machines and production methods are no longer competitive. A fourth of the Russian population lives in mono-cities, which constitute 40 percent of nationwide industrial production.<sup>357</sup> In Baykalsk, one of the mono-cities, the paper mill is the only large-scale employer for the city's 14,700 inhabitants.

The Russian government first tackled the problem in 2009, when the economic crisis sparked social unrest in the mono-cities. A few former employees of the Baykalsk paper mill went on a hunger strike, while in Pikalevo, near St. Petersburg, where the population is primarily employed in the cement industry, thousands took to the streets to demonstrate. The Kremlin immediately created a list of potential cities at risk, of which 27 were to be state subsidized. The first three names on the list were Tolyatti, where the automobile manufacturer AvtoVAZ gave rise to the largest mono-city, with 700,000 inhabitants, as well as Pikalevo and Baykalsk.<sup>358</sup> Millions in subsidies from the federal budget are intended to promote the restructuring of local companies in the subsidized cities, to create new employment opportunities or, as a last resort, to shut down the site and resettle the population. Since the last option is not particularly popular, the government is hoping to maintain jobs in the short-term, even if the environment suffers. Whether or not this will improve livelihoods on the Baikal in the long-term is questionable.



# FAR EASTERN Federal District

Population in 2010	6.44 million
Population in 2030 (projection)	5.46 million
Population/km <sup>2</sup> of land in 2010	1
Total fertility rate in 2005-2010	1.58
Life expectancy at birth in 2005-2010	65.9
Annual net migration 2005-2010	- 17,919
Mean age in 2010	36.7



(Source: see page 139)

## The difficult transition to a market economy

Right-hand traffic prevails on Russia's roads. Nonetheless, many drivers in the harbour city of Vladivostok have their steering wheel on the right side. The erroneous seat is the result of the mass import of Japanese used cars designed for left-hand traffic. For decades, the business of importing automobiles into Primorsky Krai flourished. This is the south-eastern tip of Russia, over 6,000 kilometres from Moscow but cheek by jowl with China, North Korea and the Sea of Japan. Russian automobiles were not economically competitive because transport from the factories west of the Urals was so expensive.

In 2009, the Russian government put an end to imports by significantly increasing tariffs on automobiles. Shortly thereafter, the state Vneshekonombank gave a loan of about 40 million euros to the Russian automobile manufacturer Sollers to build a car

manufacturing plant in Vladivostok. Vladimir Putin personally had jump-started the deal, for Moscow had noticed that the economic bonds between Russia's eastern-most federal district and the rest of the country had worn thin. The domestic economy's share in the entire economy of Khabarovsk Krai, which together with Primorsky Krai constitutes the social centre of the federal circle, increased from 20 to 75 percent in the first ten years after the fall of the Soviet Union. At the same time, the share of exchange with other Russian regions fell from 75 to 10 percent while foreign trade increased slightly from five to 15 percent.<sup>359</sup>

It remains a question as to whether or not efforts to re-integrate the Far East into the Russian economy will succeed. The end of the planned economy instigated the fall of numerous highly-subsidized production sites in the defence and consumer industries. People who were once compelled by fixed state wage subsidies, longer vacation and early pensions to move to one of the many small industrial cities in the East now follow the incentives of the free market. Under

these circumstances the Far East is not a popular destination – due to insufficient infrastructure as well as the high cost of living and harsh climatic conditions. In areas far away from the coast, in particular, a strong continental climate generates extreme temperatures in many places. In 1933, temperatures of minus 68 degrees Celsius in the Sakha Republic were recorded as the lowest ever in the world outside of the Antarctic.

While the 1989 census recorded 7.9 million people in the Far East, in 2004 there were only 6.6 million.<sup>360</sup> This means that almost half of Russia's demographic shrinkage in this period can be traced to the Far East, an area in which less than five percent of the entire Russian population live. The northern regions, in particular, experienced a veritable exodus: while agriculture, transport and trade in the south partially absorbed the industrial crisis, people in the north often had no

choice but to leave. The next markets were too far away and even subsistence farming was impossible in the icy months of winter and the miry months of summer. Thus, the sparsely-populated Chukotka Autonomous Okrug lost two-thirds of its inhabitants by 2004 and Magadan Oblast over half. Entire settlements disappeared. Those who left were primarily ethnic Russians or Ukrainians who first came to the East during the Soviet era. In Chukotka Autonomous Okrug, the number of Russians dropped from 108,000 in 1989 to 28,000 in 2002, while the number of indigenous people, more strongly connected to the region by family and tradition, increased slightly.<sup>361</sup>

Emigration and mortality surpluses

Since the fall of the Soviet Union, more people have been leaving than moving to the Far East every year. In the early 1990s, Russia's easternmost federal district lost 100,000 people annually due to out-migration. Since then, migration has decreased substantially since the remaining population is more strongly rooted in the region than were the initial emigrants, who had often come to the Far East but a few years earlier for professional reasons. The mortality surplus remained relatively stable in this period and is now almost as great as the population decrease resulting from emigration.

Migration and natural population movements in the Far Eastern Federal District, 1993 to 2008

- Deaths
- Births
- Emigration
- Immigration
- Net migration
- Natural population balance

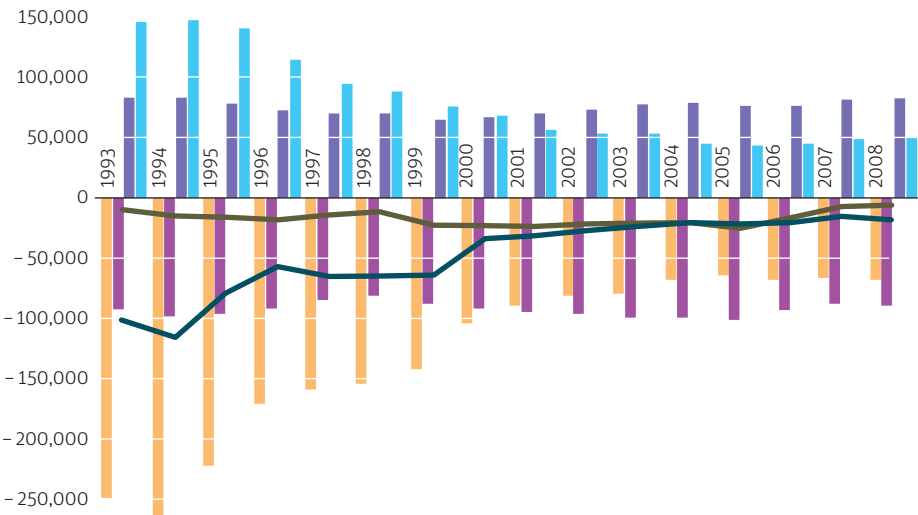
(Source: Rosstat, Tsentralnaya Baza Statisticheskikh Danykh, Moscow, author's calculations)

Economic structure influences population development

Why did the Soviet Union invest vast quantities of capital into the settlement of the most inhospitable stretches of its empire in the first place? The answer lies in part in the region's rich natural resources and in part in its military significance during the Cold War. The world's largest known diamond reserves can be found on the territory of the Sakha Republic, while the Chukotka Peninsula, Magadan Oblast as well as Amur Oblast on the Chinese border are replete with gold. Before the coast, around the Sakhalin Island, there are large and to a great extent untapped oil and natural gas fields. As for the military, the main stronghold of Russia's Pacific Fleet, which served, among other things, as a nuclear deterrent against the USA, still lies in Vladivostok and in Petropavlovsk-Kamchatsky on the Kamchatka Peninsula. From here, nuclear submarines bearing atomic weapons could reach the east coast of America within days.

While the military bases in the Far East have been scaled down since 1991, the exploitation of natural resources remains the region's most important economic branch. But because this creates comparatively few jobs, not all inhabitants profit equally. Because labour-intensive manufacturing industries fell into ruin due to the crisis and the loss of state subsidies, a large portion of the population has no prospects for employment. And even those who have found work suffer from extremely high prices in Russia's east, where six of the country's ten most expensive regions can be found.<sup>362</sup> Even though the local administration managed to reduce poverty levels significantly with transfer payments, an above-average number of people in 2009 still had to cover daily expenses with an income below the official subsistence minimum.<sup>363</sup> In the agricultural regions east of Lake Baikal – Amur Oblast and the Jewish Autonomous Oblast – the rate was approximately 25 percent.

In contrast, poverty in Chukotka Autonomous Okrug fell dramatically, from 50 to 13 percent between 2000 and 2007.<sup>364</sup> During this period, the governor and oligarch Roman Abramovich radically overhauled the gold-producing region. He built schools and hospitals, repaired homes and acquired new investments. Abramovich also filled public





## The Birobidzhan experiment

The Jewish Autonomous Oblast, including the capital city of Birobidzhan, is located in southernmost Russia. About 185,000 people live here on the border to China on a piece of land roughly as large as Switzerland.<sup>365</sup> In spite of the region's name, the majority of the population is not Jewish. The 2002 census counted but 2,327 Jews, which constituted 1.2 percent of the population. This means that only about every 100<sup>th</sup> Jewish inhabitant of Russia lives in the Jewish autonomous region.<sup>366</sup> Even though so few Jews live in the territory, Yiddish is taught in schools. There is also a Jewish daily paper and a Jewish radio station.

The idea for the autonomous territory arose at the end of the 1920s as a logical consequence of Lenin's policies. He wanted to divide the Soviet Union into territories in which various cultures could practice their traditions – within a socialist framework. But there were also practical reasons for the founding of Birobidzhan: Judaism and Zionism were contrary to state-mandated atheism and soviet nationalism in the early Soviet Union. By resettling Jews in far-off and almost uninhabited Siberia, the Kremlin sought to solve this problem. Furthermore, the settlers north of the Amur were meant to strengthen the border to China and to help access the region's immeasurable natural resources.

Despite extensive propaganda, Soviet rulers did not manage to convince a significant number of Jews to move east from the European part of the country. The small province at the southernmost tip of the country experienced something like a boom only at the end of World War II and prior to the founding of Israel. The 30,000 Jewish inhabitants – a third of the population – in 1948 constituted the peak of this development. Then, within a decade, the territory lost more than half of its Jewish population.<sup>367</sup> In the wake of Stalin's ethnic cleansings, which had already adversely affected the region in the 1930s, the Soviet rulers closed down schools and detained numerous intellectuals and clergy. Additionally, Israeli independence gave Jews an alternative homeland to flee to, as long as the state permitted. This increasingly became the case. There remained an autonomous Jewish territory with almost no Jews.

coffers with tax revenues from the fortunes of Sibneft, his own oil company. Due to low tax rates, other companies set up their headquarters on the peninsula, without, however, expanding their actual activities there. The employees of these companies nonetheless count as employed people in Chukotka Autonomous Okrug, leading to

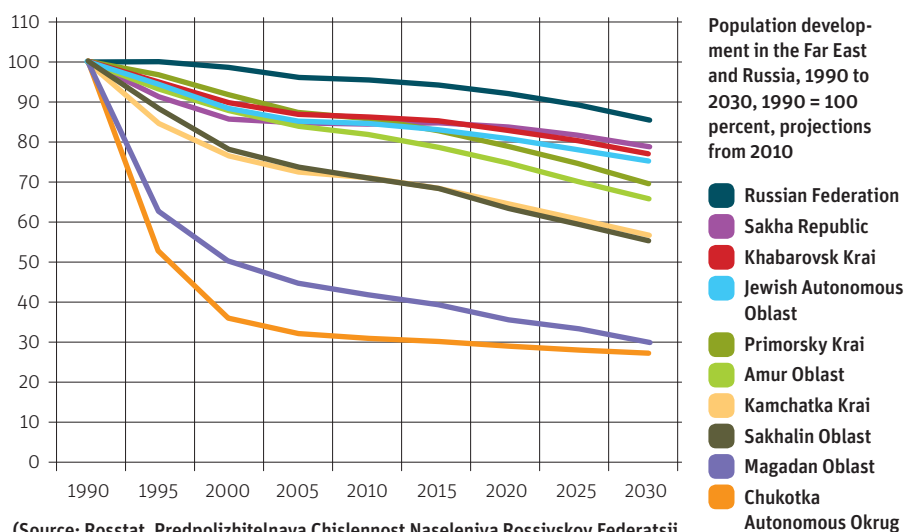
a fictitious employment rate of over 100 percent. In reality, the rate is well below full employment, since a large share of the indigenous population still raise reindeer or hunt fish and sea mammals, activities not often reflected in statistics. The fragility of Abramovich's construction became apparent in 2006, when the former governor sold Sibneft to Gazprom and the region's budget as well as the scope of investment drastically shrunk immediately after.<sup>368</sup> Even though Abramovich was able to decelerate the population loss during his reign, he could not turn it around.

The structure of the Far East's economy, providing jobs primarily in traditionally male sectors such as the military, resource extraction and the fishing industry, has had demographic consequences: there is a dearth of women. At the beginning of 2008, Chukotka Autonomous Okrug and Kamchatka Krai were the only Russian regions in which there were more men than women. In particular, in the 20 to 29 age group, which is especially important for the starting of families, the disproportion was enormous: in both regions named above, there are four men to three women. The situation is similar in Primorsky and Khabarovsk Krai, Sakhalin Oblast and the Jewish Autonomous Oblast.<sup>369</sup> Despite a relatively young population, more people die in large parts of the Far East than are born. Only Sakha Republic and Chukotka Autonomous Okrug have stable birth surpluses, as the large indigenous populations contribute to high fertility rates. While women in the entire Far East bear an average of 1.58 children in their lifetime, women in Sakha Republic and Chukotka Autonomous Okrug have an average of two children.<sup>370</sup>

Despite these exceptions, the demographic dynamics in the Far East, compared to the Soviet era, have made a 180 degree turn. Where once young immigrants created a stable birth surplus, today the population is losing due to out-migration and mortality surpluses. Since the beginning of the century the latter are as high as migration losses. A few areas, such as Khabarovsk Krai and the Jewish Autonomous Oblast, recently recorded slight immigration gains since many people who wanted to leave the region have already done so.

## The Far East loses most

Compared to the national average, all regions of the Far East have lost a disproportionately high share of their populations since 1990. This is particularly true of Magadan Oblast and Chukotka Autonomous Okrug. Both have lost well over half of their inhabitants. While the demographic shrinkage in the 1990s was due mainly to out-migration, mortality surpluses have been responsible for losses in recent years. At the same time, the shrinking process has been slowing down. By 2030, the negative trend will nonetheless probably continue in all regions and maybe even accelerate, as the population is ageing.



(Source: Rosstat, *Predpolizhitelnaya Chislennost Naseleniya Rossiyskoy Federatsii do 2030 goda*, Moscow)

Life expectancy, on the other hand, remains comparably low despite recent improvements. Male life expectancy in Russia's east is 60 years, which is shorter than in Yemen, Madagascar and Cambodia. Women have an average life expectancy of 72.2 years, which is still two-and-half years less than the nationwide average.<sup>371</sup>

There are several reasons for low life expectancy in the Far East. Average alcohol consumption is higher here than the Russian standard, which is itself high, and the harsh climate also plays a role. Furthermore, infant mortality rates of 10.5 deaths per 1,000 live births lie well above the Russian average of 8.1. The average in the European Union is less than five.<sup>372</sup> Although the numbers have improved in recent years, agricultural regions, such as Amur Oblast and the Jewish Autonomous Oblast, lag significantly

behind due to insufficient medical care. And tuberculosis is once again on the march, affecting primarily the indigenous population. In Koryak Autonomous Area, which has been incorporated into Kamchatka Krai, three times as many people die of tuberculosis than in the rest of the country.<sup>373</sup>

## The “Yellow Peril”

Even if the military significance of the Far East has decreased since the fall of the Soviet Union, many Russians still view the uniform settlement of their territory as extremely important in order to maintain control of the entire Eurasian land mass. That the Far East currently contains 6.5 million people in a territory ten times the size of France worries many Russians. In the face of low fertility rates, massive immigration is the only thing which could change the situation. But where should immigrants come from if even Russians are turning their backs to the Far East? Efforts to attract Russians returning from other former Soviet republics have not proven successful.<sup>374</sup> This leaves international immigration, for example, from China. After all, on the other side of the Amur

River, which demarcates the Russian-Chinese border, more than 100 million people live in the three north-eastern provinces of China alone.<sup>375</sup> It is estimated that per kilometre of border there are 63,000 Chinese to one Russian.<sup>376</sup> But this is where the dilemma arises: many Russians see the Chinese as a major threat.

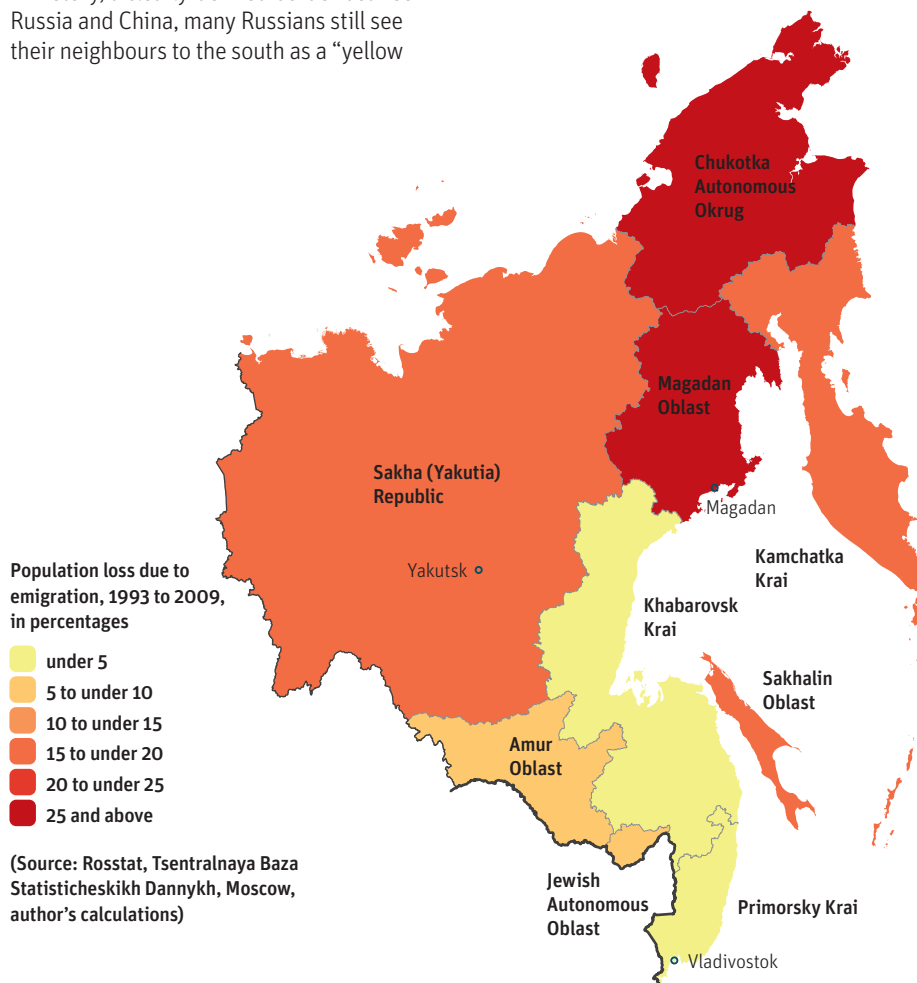
To understand the reasons for Russia's fear of its neighbour, we need to take a look at the history of both countries. They first came into conflict at the end of the 17<sup>th</sup> century in today's Amur Oblast and Primorsky Krai. The Chinese Qing Dynasty at first gained the upper hand, blocking Russian access to the Pacific. But Russia's expansionist policies continued and they annexed the lost territories of Outer Manchuria to the Czarist Empire in 1860. In order to cement its hegemony north of the Amur and east of the Usuri, Russia created the city of Vladivostok following a successful campaign. The name

of the city, which essentially means “Rule the East,” did not leave any doubt as to the Czar’s intentions. At the beginning of the 20<sup>th</sup> century, the Russian occupation of Inner Manchuria nonetheless failed south of the Amur after Japan entered the conflict. Most recently, China and the former Soviet Union stood at the brink of war in 1969, when military conflicts over the status of small islands in the Ussuri River flared. It was only in 2004 that the former president Vladimir Putin and his Chinese counterpart Hu Jintao put an end to the conflict. Russia ceded two of the last three islands of undetermined status to China and the two countries divided the third.

Even though there is now, for the first time in history, a clearly-defined border between Russia and China, many Russians still see their neighbours to the south as a “yellow

peril.” The Russian media conjure figures of two million Chinese who have allegedly settled in the Far East as part of a Chinese plot to colonize the region.<sup>377</sup> According to many experts, the number of Chinese who have settled permanently in the north in hopes of earning more only approaches about some hundreds of thousands.<sup>378</sup> Moreover, more than a third of these claimed in 1999 to want to stay only as long as their current employment contracts were valid or until their studies in Russia were completed.<sup>379</sup>

Many Chinese, on the other hand, do not settle at all in Russia. They simply cross the border in order to ply their cheaply-produced wares on the markets of Vladivostok and Khabarovsk – primarily clothes and foodstuffs. Here, they can net higher prices than they can in their homeland and cover supply shortages, which have increased steadily in the Far East since the fall of the Soviet Union. Even though the Russian government has prohibited foreigners from street-selling since 2007, these so-called “shuttle traders” remain ubiquitous in the cities of the Far East. Consequently, they are much more strongly perceived by the Russian population than their actual population numbers warrant. Indeed, the Chinese population made up a far larger share of the total population before Stalin’s ethnic purges in the 1930s than it does today.<sup>380</sup>



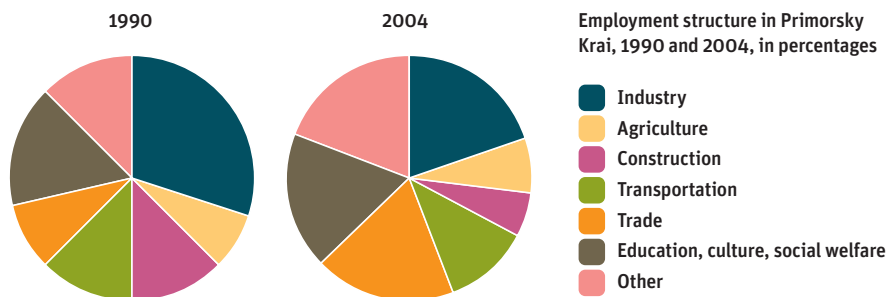
(Source: Rosstat, Tsentralnaya Baza Statisticheskikh Danykh, Moscow, author’s calculations)

### Exodus following the demise of the planned economy

The demise of the Soviet planned economy hit the country’s eastern territories particularly hard. The loss of subsidies, wage supplements and social benefits made the region increasingly unattractive to live in. Accordingly, all territories of the Far East have had to face population loss as a result of emigration since the beginning of the 1990s. In particular, the cold northern regions have suffered from the emptying of entire stretches of land: Magadan Oblast has lost a third of its population to emigration since 1993 and Chukotka Autonomous Okrug over half of its population.

## A crisis facing industry and construction

Primorsky Krai epitomizes the post-Soviet crisis in the Far East and Russia. Many former combines were not able to survive without state subsidies, which meant that employment in the industrial sector sank significantly in the 15 years following the fall of the Soviet Union. In Primorsky Krai, it was primarily the defence industry which lost in importance. Construction also suffered in the wake of mass emigration. On the contrary, trade is growing throughout the country. The diagram does not depict the shadow economy which sustains many people in Primorsky Krai.



(Source: Nezavisimyy Institut Sotsialnoi Politiki, Sotsialny Atlas Rossiskikh Regionov)

## The “Yellow Hope”

Despite the tariff increase and extensive scepticism towards Chinese immigrants, Russia’s economic rapprochement with its neighbour in the Pacific is progressing. Accordingly, in September 2009, Russian and Chinese leaders gave the go-ahead for a project which plans to realize 205 joint projects in border regions. By 2018, coal, iron ore, precious metals and wood will be extracted from the Russian side and, subsequently, used for production purposes in China, where there is no shortage of labour or money.<sup>381</sup> Furthermore, Russian and Chinese authorities established a joint international free trade zone in 2005 between the Russian city of Blagoveshchensk to the north and the Chinese city of Heihe to the south of the Amur. This has led to a veritable boom in the trade of articles of daily use.

The most economically significant industries in Russia’s relations to its neighbouring countries in the Pacific are the capital-intensive oil and gas industries. In 2009, construction of the so-called Nakhodka pipeline began, which will transport Siberian oil from the Baikal region to the Sea of Japan. From there, the oil will be shipped to Japan. China will also profit from this project: via a branch to Daqing, Russia will deliver 15 million tonnes of oil annually to its southern neighbour, with which it also signed an agreement for two natural gas pipelines in 2006.<sup>382</sup>

Far more important for the Far East as a production site are the oil and gas industries in the inhospitable Sakhalin Oblast. Both the Czars and the Soviets used the island primarily as a prison camp. The Sakhalin-2 project in the Sea of Okhotsk north of Japan, which has been in the hands of Gazprom since 2006 and is subject to fierce criticism by environmental organizations, is the world’s largest integrated project for the

production of liquefied natural gas (LNG). In contrast to its gaseous counterpart, LNG can be shipped. Main buyers of the Sakhalin products are Japan and South Korea.

Even though 95 percent of tax revenues from oil and gas production flow towards Moscow and the companies increasingly depend upon foreign expertise to build wells and pipelines, many inhabitants of Sakhalin, particularly those in the capital of Yuzhno-Sakhalinsk, have profited from the natural resources boom. The unemployment rate, one of the country’s highest at 13.2 percent at the turn of this century, had fallen by 2007 to under five percent – it rose again, however, in the wake of the economic crisis in 2009. Work on the construction sites of the emerging infrastructure, which was also intended to make the island accessible to tourists, provides about 500,000 inhabitants with an alternative to fishing and the hunt for Kamchatka crabs. Real income has also risen: from 2002 to 2009, it increased from 440 to 1,018 international dollars per capita.<sup>383</sup>

## Saying good-bye to illusions

The oil and gas boom notwithstanding, fewer people will live in Sakhalin in the upcoming years. Projections predict that the island will lose over 100,000 inhabitants by 2030, a fourth of its current population. Only the northern region of Magadan, which can only be reached by unpaved roads or airplane, will be harder hit by shrinkage in the Far Eastern Federal District. Russia’s largest district (in terms of surface) will continue to have the smallest population by far. With slightly falling fertility rates, the number of inhabitants will decrease another 15 percent to 5.46 million by 2030. As everywhere else

in Russia, the working-age population will be hit particularly hard: the number of men between 16 and 59 years old and women between 16 and 54 years old will shrink by about 23 percent.<sup>384</sup>

Both Khabarovsk Krai and Primorsky Krai will remain regional centres. More than half of the district's population already live in these regions today. In contrast to the rest of the Far East, both regions have clear advantages: they are located in temperate climate zones, they are connected to the rest of the country by the Trans-Siberian Railway and they have the best educational institutions. With

western capital, the pride of Russia's civil aviation industry, the Super Jet 100, is now being built in Komsomolsk-on-Amur. In order to attract foreign capital long-term, however, Far Eastern regions, and Primorsky Krai in particular, need to rigorously fight corruption and economic crime.

Russian politicians will undoubtedly have to relinquish fantasies of dense settlement in the Far East. Without state support, many companies which the Soviets settled in the east for geo-political reasons cannot survive. There is a dearth of both people and financial power. Regional planners seem to have recognized that their economically powerful

Asian neighbours could help as investors. But they find it harder to accept immigration. In the long-term, they will nonetheless have to get used to Chinese and Korean immigration, first, because they will soon experience a shortage of labour and secondly, because earning opportunities in Russia, which is rich in natural resources, are better than they are in China.

## Data for the Asian part of Russia

		Demography					Economy				Population projection 2010-2030 (percent)
		Cluster	Total fertility rate 2009	Population aged 59 and older 2009 (percentage)	Life expectancy 2009 (years)	Net migration per 1,000 inhabitants (mean 2006-2009)	Cluster	Gross domestic product per capita 2008 (International dollars)	Expenditures on research and development 2008 (percentage of GDP)	Employment 2008 (percentage of age group 15 to 59)	
Data for the Asian part of Russia											
URAL Federal District											
RUS56	Kurgan Oblast	4	1.61	18.5	67.4	-4.1	3	7,744	0.2	64.8	-22.1
RUS57	Sverdlovsk Oblast	3	1.55	17.3	68.4	2.0	2	13,569	1.1	69.6	-10.2
RUS58	Tyumen Oblast	5	1.75	9.1	69.5	2.4	1	46,628	0.2	76.5	5.6
RUS59	Chelyabinsk Oblast	3	1.57	17.4	68.3	1.2	2	12,947	0.9	71.1	-11.8
SIBERIAN Federal District											
RUS60	Altai Republic	5	2.36	10.7	65.8	0.7	3	5,726	0.2	68.0	10.8
RUS61	Republic of Buryatia	4	2.00	12.5	65.3	-2.7	4	8,196	0.3	62.5	-8.6
RUS62	Tuva Republic	5	2.81	7.4	60.0	-5.1	4	5,136	0.5	52.0	13.0
RUS63	Republic of Khakassia	4	1.75	14.4	67.3	0.5	3	9,226	0.1	66.2	-6.6
RUS64	Altai Krai	3	1.51	17.2	68.5	-1.9	3	7,688	0.3	64.2	-15.6
RUS65	Krasnoyarsk Krai	3	1.54	14.6	67.6	0.2	3	15,051	0.6	70.9	-11.5
RUS66	Irkutsk Oblast	4	1.77	14.4	65.5	-2.2	3	11,608	0.6	67.5	-11.0
RUS67	Kemerovo Oblast	3	1.60	16.3	65.4	2.5	3	15,001	0.1	68.2	-12.3
RUS68	Novosibirsk Oblast	3	1.54	17.5	68.9	2.8	2	10,869	2.1	70.3	-10.4
RUS69	Omsk Oblast	3	1.49	16.1	68.7	-0.3	2	12,503	0.7	67.9	-12.1
RUS70	Tomsk Oblast	3	1.41	14.5	68.1	3.0	2	14,468	1.8	67.4	-6.3
RUS71	Zabaykalsky Krai	4	1.84	12.3	64.7	-3.1	3	8,387	0.1	64.1	-10.9
FAR EASTERN Federal District											
RUS72	Sakha (Yakutia) Republic	4	2.00	8.8	66.5	-6.2	3	14,585	0.4	72.8	-3.9
RUS73	Primorsky Krai	4	1.47	16.1	66.7	-1.4	2	8,142	1.2	70.0	-19.4
RUS74	Khabarovsk Krai	4	1.49	14.9	66.3	0.2	3	9,384	0.3	73.8	-12.9
RUS75	Amur Oblast	4	1.56	13.9	64.4	-3.6	3	8,844	0.2	70.4	-17.0
RUS76	Kamchatka Krai	4	1.50	11.7	66.1	-5.2	2	8,336	1.3	72.9	-17.2
RUS77	Magadan Oblast	4	1.51	10.6	64.1	-13.3	2	11,540	1.9	75.3	-23.0
RUS78	Sakhalin Oblast	4	1.51	13.2	64.8	-4.7	1	27,406	0.2	78.7	-20.9
RUS79	Jewish Autonomous Oblast	4	1.53	13.7	63.3	0.2	3	8,057	0.1	63.7	-13.5
RUS80	Chukotka Autonomous Okrug	4	2.01	5.9	58.2	-12.7	1	19,190	0.1	101.3	-18.1

# THE WEST

ESTONIA

LATVIA

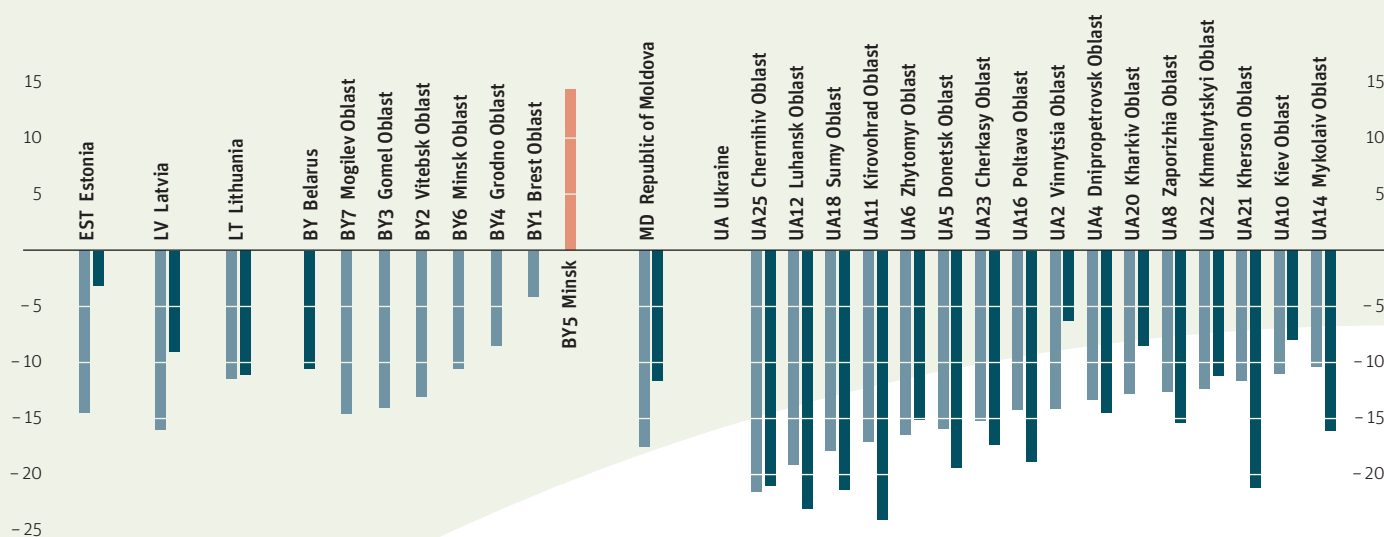
LITHUANIA

BELARUS

REPUBLIC OF MOLDOVA

UKRAINE

Since the eastern enlargements of the European Union in 2004 and 2007, the western Soviet successor states have bordered EU countries. The three Baltic states have even become part of the Union. This has resulted in profound changes for the entire region: more and more people, from the Baltic European Union states as well as from Ukraine and Moldova, go west in search of work, since – especially in the latter two countries – the enormous economic and social changes caused by the Soviet Union's collapse continue to reverberate. These countries have not entirely managed to liberate themselves



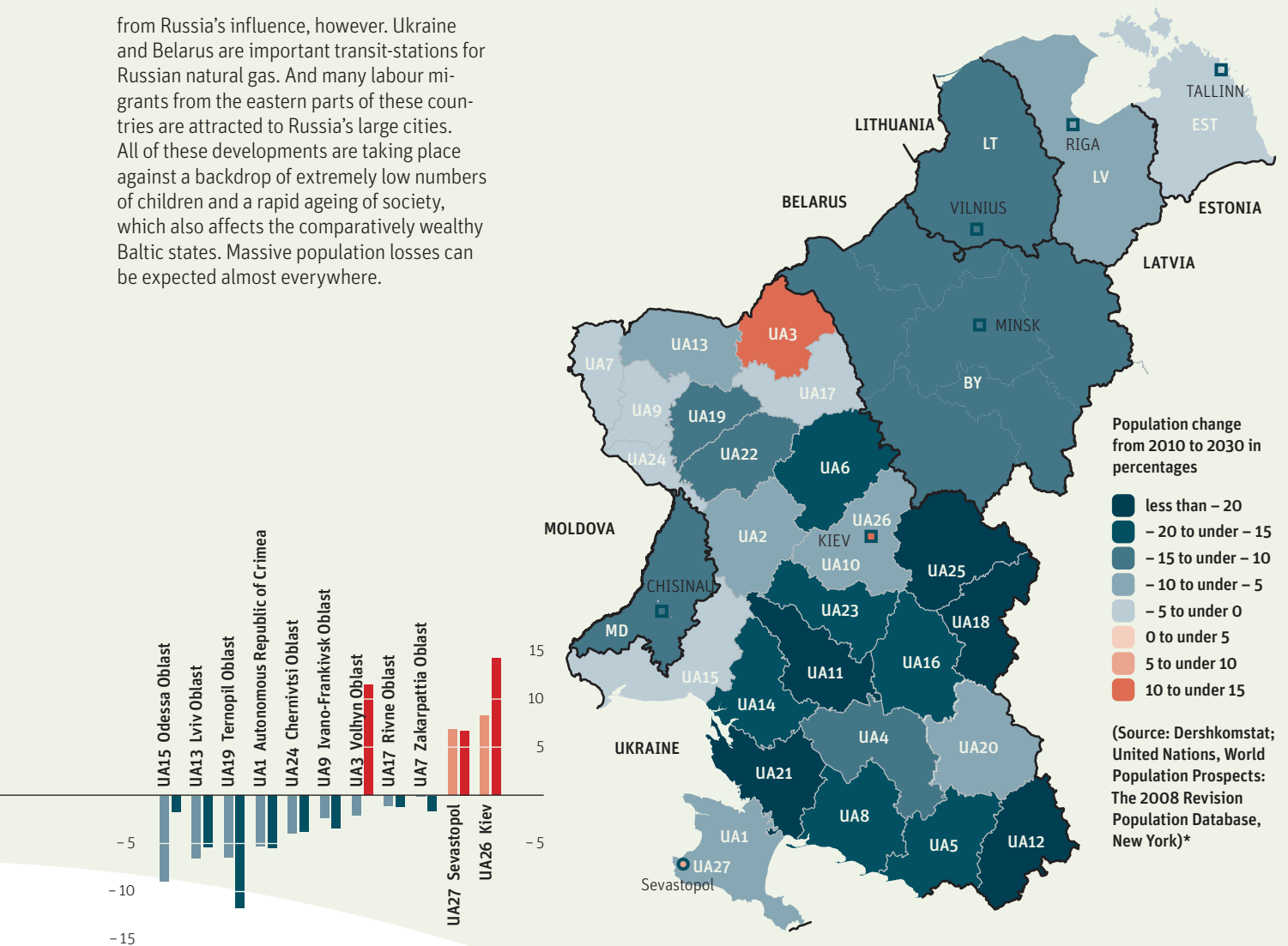
Population change in percentages

- 1989 (census) until the end of 2009
- Beginning of 2010 to the end of 2030

(Source: Derschawni Komitet Statistiki Ukraini; United Nations, World Population Prospects: The 2008 Revision Population Database, New York; Demoscope Weekly. Vsesoyuznaya Perepis Naseleniya 1989 Goda, Moscow)

\* All national values (Belarus, Moldova, Estonia, Latvia, Lithuania) for 2009 and 2030 refer to 1 July of the following year, not the end of the year in question. For the beginning of 2010, the value of 1 July 2010 was used for reasons of availability of data.

from Russia's influence, however. Ukraine and Belarus are important transit-stations for Russian natural gas. And many labour migrants from the eastern parts of these countries are attracted to Russia's large cities. All of these developments are taking place against a backdrop of extremely low numbers of children and a rapid ageing of society, which also affects the comparatively wealthy Baltic states. Massive population losses can be expected almost everywhere.



### Demographic downturn in the hinterlands of the EU

The western regions of the former Soviet Union are shrinking, virtually without exception. Emigration is an important factor in this, although the numbers of children also lie well below the 2.1 children per woman which would ensure stable population development. Stability or even population growth is limited to but a few cities. One exception is the rural area of Volhynia in the country's outer reaches of the northwest. With 1.87 children per woman, it has the country's second highest fertility rate after neighbouring Rivne Oblast. Alongside these, regions such as the Black Sea coast near Odessa or the Crimean Peninsula, which are attractive to tourists, will lose relatively few people.

\* The regional population projections for Ukraine are based on the medium variant of national calculations. These correspond most closely to the United Nations' projections used for the other countries.



# ESTONIA

Population in 2010	1.34 million
Population in 2030 (projection)	1.30 million
Population/km <sup>2</sup> of land in 2010	30
Total fertility rate in 2005-2010	1.64
Life expectancy at birth in 2005-2010	73.1
Annual net migration 2005-2010	0
Median age in 2010	39.6



(Source: see page 139)

## Tiger’s leap into @-stonia

“We walked over water because we did not know it was impossible.” This was said by the former Estonian prime minister Mart Laar regarding his country’s first bold steps towards a market economy.<sup>385</sup> At the tender age of 32, the former teacher took hold of the reigns of the northernmost Baltic republic in 1992, shortly following independence. Under Laar’s leadership, Estonia rigorously pursued western policies, was the first European country to introduce a uniform income tax rate and pegged the Estonian kroon to the euro. Together with its Baltic neighbours, Estonia became a member of the EU in 2004. As a result of Laar’s reform programme, the Estonian economy, adjusted for price level increases, grew an average of eight percent annually between 2000 and 2007.<sup>386</sup> In the World Economic Forum rankings of the most competitive countries in 2009/2010, Estonia was 35<sup>th</sup>. Germany ranked only 133rd.<sup>387</sup>

Yet the economic and financial crisis hit Estonia hard. In 2009, GDP fell by 14 percent. The unemployment rate, which had been less than four percent at the beginning of 2008, rose again to over 15 percent by the end of 2009.<sup>388</sup> The construction industry, which had ballooned during the boom period, lost thousands of jobs. Those who were laid off will find it difficult in the future to regain a foothold in the labour market without re-training or additional qualifications. Nonetheless, Estonia came through the recession in better shape than its Baltic neighbours. Thanks to quickly-implemented and severe cuts in domestic expenditures, it was able to adopt the euro in 2011. Even in 2009, the year of the crisis, Estonia had a budget deficit of a mere 1.7 percent and a sovereign debt of 7.2 percent of GDP, the lowest in the European Union by far.<sup>389</sup>

In the past few years, Estonia has modernized at an astounding pace. The country is especially proud of its quick and extensive expansion of electronic communication technology, such as e-learning and e-government. In 2005, Estonia held local elections using online voting for the first time; an electronic ID was sufficient

to identify voters. Bank transactions and income tax declarations can also be extensively executed electronically since the country created a programme in 1997 to introduce nationwide wireless internet access. Since 2000, all Estonians have enjoyed the fundamental right to free Internet access. Estonians have been able to surf on ships and in trains and buses for free for years.

Due to its “Tiger’s Leap” programme introducing modern information technology, Estonia has a strong services sector in which over 60 percent of the employed work. This is significantly more than in most other former Eastern Bloc countries.<sup>390</sup> Up until the outbreak of the economic crisis, the construction and tourist industries counted among the most strongly growing economic sectors. At times, tourism generated up to 15 percent of GDP. It is primarily Finns, Swedes and Russians who are interested in Estonian tourism, as well as in trade and investment.<sup>391</sup>

To visitors, Estonia is a paradise of endless forest and sparsely-populated stretches of land. But the Soviet's planned economy has left grave environmental problems. For example, about 90 percent of electricity produced in Estonia comes from the burning of native oil shale in open-pit mines.<sup>392</sup> Large power plants puff away especially in the industrial city of Kohtla-Järve, in the country's northeast. Worldwide, only China continues to depend so extensively on such a filthy method of generating energy, in which aggressive sulphur dioxide and gases containing heavy metals are released. A governmental programme now aims, however, to significantly reduce the quantity of oil shale in generating energy.<sup>393</sup> In order not to become too dependent upon Russian oil and gas supplies, the Estonians have already laid the first underwater electric cable to Finland. The "Eastlink 2", another 650 watt cable, is planned to follow by 2014. The European Union wants to invest up to 100 million euros in the cable.<sup>394</sup>

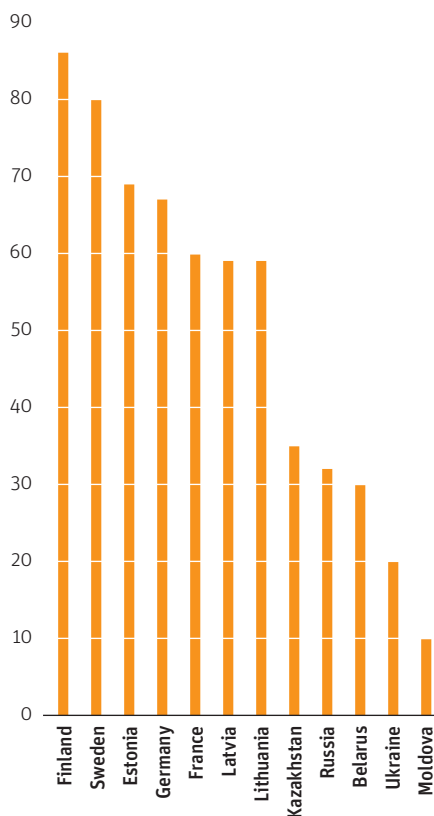
## Northern Europe is well connected

**69 percent of all Estonian adults are online. This is more than in any other Soviet successor state and even more than in France or Germany. It is only in Europe's north, in the Scandinavian countries, Great Britain and the Netherlands that a larger portion of the population has access to Internet than in the small country on the Gulf of Finland.**

Percentage of adults with access to Internet, 2010  
(Source: GfK Austria, Central Eastern Europe Network. Aura presentation in London, May 2010)

## Integration problems

Up until the Second World War, Estonia was a relatively ethnically homogenous country with 88 percent ethnic Estonians. Subsequently, the Soviet leadership pursued the immigration of Russians and the share of Estonians sank to a mere 61 percent by 1989. Since then, it has once again risen to 69 percent, especially because Russians have emigrated.<sup>395</sup> In 1991, all non-Estonians who had entered the country since the "Soviet occupation" – a third of the population – received a permanent residency permit. However, only those who can demonstrate sufficient knowledge of Estonian are granted Estonian citizenship. Almost 150,000 people have so far become Estonian citizens.<sup>396</sup>



There are, nonetheless, integration problems with regard to the ethnic Russian population, particularly among adolescents. The boom of the past few years may have obscured discrimination, but the economic crisis and increasing unemployment have once again brought it to light. Yet, already in 2005, shortly before the economic boom peaked, the unemployment rate among non-Estonian youth was three times as high as among Estonian youth. One reason for this was that more than half of non-Estonians – meaning those who are not citizens – cannot communicate in Estonian. The social marginalization of ethnic Russian youth is also revealed by the spread of Aids. Starting in Narva, the country's third-largest city right on the border of Russia and in which almost 90 percent of the population is Russian-speaking, HIV has rapidly spread to other parts of the country since 2000. As everywhere else in the post-Soviet region, this is primarily due to injecting drug users.<sup>397</sup>

In other areas, Estonia bears greater resemblance to Central European countries, where demographic crises following the fall of the Soviet Union were less drastic than in most of the CIS countries. The average number of children per woman did, indeed, sink in the mid-1990s to 1.3, but increased again to 1.65 in 2008. This was the highest rate in all of Europe east of the former Iron Curtain.<sup>398</sup> The natural population development, which, due to more deaths than births, deteriorated significantly since the beginning of the 1990s, has now once again achieved balance. This is also due to the fact that the large generations of the 1980s are now old enough to start families. Nonetheless, the most recent population projections predict a slight population decrease of about three percent by 2030, because the future generation of parents has already shrunk significantly due to a shortage of births in the past few years.<sup>399</sup>

# LATVIA

Population in 2010	2.24 million
Population in 2030 (projection)	2.05 million
Population/km <sup>2</sup> of land in 2010	35
Total fertility rate in 2005-2010	1.40
Life expectancy at birth in 2005-2010	72.4
Annual net migration 2005-2010	– 2,000
Median age in 2010	40.0



(Source: see page 139)

## Great rise, deep fall

2009 was a fateful year for Latvia. The Baltic country's GDP dipped by almost 19 percent. No other EU country fell so deep as a consequence of the global financial and economic crisis; only neighbouring Lithuania experienced an equally strong undertow.<sup>400</sup> In February 2009, the Latvian government had to step down as a result of the crisis. In December, Latvia's insolvency could only be avoided by a 7.5 billion euro loan from the International Monetary Fund. The "Baltic Tiger's" great leap forward almost ended in national bankruptcy; up to 2008, the country had still registered economic growth rates of over ten percent.

Upon independence in 1991, Latvia emerged as one the wealthiest countries from the former Soviet Union.<sup>401</sup> This was also why the country managed its "return to the West" fairly quickly: in 1992, Latvia joined the International Monetary Fund, in 1999 the World Trade Organization and in 2004 both NATO and the European Union.

Yet in the last few years, the country has lived well beyond its means. The economic boom at the beginning of the new century did, indeed, temporarily lower unemployment rates, but because skilled labour grew scarce, wages rose drastically. High inflation was the result, reaching its peak at 15 percent in the summer of 2008.<sup>402</sup> The belief in the country's rise was so strong that people continued to live on credit. Between 2004 and 2006, some banks even offered customers loans when the monthly repayments were as much as half of disposable income. When the economic crisis destroyed many jobs and reduced incomes, many Latvians could not pay back their debts. The unemployment rate exploded at the beginning of 2010 to 20 percent, an EU record.<sup>403</sup> Property prices plummeted during the crisis by about 50 percent.<sup>404</sup>

The proceeds from Latvia's most important export commodities – foodstuffs, wood, furniture and metal goods – could not replace the once flowing loans. Pressured by international creditors, the government had to introduce drastic cuts: the salaries of state

employees were cut back by about 15 percent and civil service jobs were reduced. Value-added tax was increased according to the commodity by anywhere from three to eleven percent to a uniform 21 percent. Ministerial, university and public institutional budgets were reduced by up to 40 percent. The upcoming years may also face higher taxes, further debt, sinking public expenditures, lower wages and fewer jobs.

### Latvians becoming more important

In 1939, the two foreign ministers Joachim von Ribbentrop and Vyacheslav Molotov assigned Latvia and neighbouring Estonia to the Soviet Union's sphere of influence in the wake of the German-Soviet Non-Aggression Pact. Lithuania was obtained one month later in a swap involving parts of Poland. This was the cornerstone of the incorporation of the three Baltic states into the Soviet Union in 1940. Stalin immediately deported

tens of thousands of nationalists, property owners and deposed officials to Siberia. In all Baltic states, marked opposition to membership in the Soviet Union grew, leading to a bloody, years-long partisan battle following the German occupation from 1941 to 1944. In order to gain control of the situation, Stalin initiated a second wave of Siberian deportations of more than 100,000 Baltic citizens in 1949. Others escaped imprisonment by fleeing to the West as the Kremlin stationed more and more Russian labourers and military in the Baltic. Up until the end of the 1980s, the Latvian population in the former Latvian Soviet Socialist Republic fell from its pre-war 75 percent to about 50 percent.

There was a turn-around following the demise of the Soviet Union. Ethnic Russians were now emigrating and a few thousand Belarusians and Ukrainians also left the country so that the Latvian population rose once again to 60 percent.<sup>405</sup> Migration was encouraged by both open and disguised discrimination of non-Latvians. For example, until 1994, citizenship laws made all non-Latvians stateless and prevented them

from voting. This clause was only abolished when international pressure was brought to bear as well as to fulfil a prerequisite for EU membership. Nonetheless, whoever wants to become a citizen must still master Latvian. This is not a matter of course for Russians. Still, every child born in Latvia to non-Latvian parents now automatically receives Latvian citizenship.

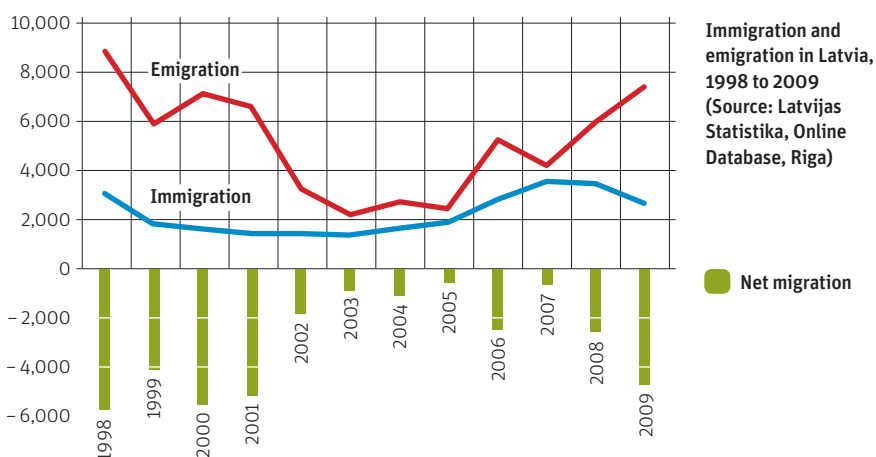
The investment and economic boom at the beginning of the 21<sup>st</sup> century almost led to a standstill in emigration in Latvia. Between 2003 and 2005, the country had an annual net emigration of about 1,000 people. The country's entry into the EU and, most recently, the economic crisis, have now led once again to a significant increase in emigration. In 2009, 4,700 left the country, meaning that emigration once again reached the levels of 1998 through 2001. Russia remains the main destination, followed now by Ireland, Great Britain and Germany.<sup>406</sup>

The number of newborns also sank due to the uncertainties of 2009, from just about 24,000 to 21,700. According to the National Statistical Office, the total fertility rate fell within a year from 1.45 to 1.32. Fluctuations in birth rates are something, however, which Latvians have had to get used to for a while: while there were two children per woman towards the end of the Soviet era, fertility fell in the first years after the Soviet Union's demise to an absolute low of 1.11 before rising again until 2008. These fluctuations led to a "birth gap" in the 1990s, when 18,000 more people died annually than were born.<sup>407</sup> This means that young people who could be starting their own families will soon be sorely missed. This is also why Latvia's population will probably shrink by ten percent by 2030, from today's 2.25 to a mere 2.04 million people.<sup>408</sup> Since 1989, Latvia's population has already decreased by more than 15 percent from over 2.6 million.

About a third of the population live in Riga, the capital. The next-largest city, Daugavpils, which lies on the Daugava River, has but 105,000 inhabitants and Liepāja, in the country's far west on the Gulf of Finland, has just 85,000 inhabitants even though it is the country's third-largest city.<sup>409</sup>

## EU membership and economic crisis lead to increasing emigration

Following massive emigration by ethnic Russians in the 1990s, which constituted up to 60,000 people annually, emigration from Latvia ceased almost entirely in the economic boom years. Most recently, however, migration losses have again risen slightly. The reason for this is, on the one hand, Latvia's membership in the EU, which has made it easier for inhabitants to settle in Western Europe, and, on the other hand, the grave recession in 2009, which sent many citizens on the search for work abroad.



# LITHUANIA

Population in 2010	3.26 million
Population in 2030 (projection)	2.91 million
Population/km <sup>2</sup> of land in 2010	50
Total fertility rate in 2005-2010	1.34
Life expectancy at birth in 2005-2010	71.7
Annual net migration 2005-2010	– 20,000
Median age in 2010	39.8



(Source: see page 139)

## The challenge of an ageing society

On 14 June 2004, the Lithuanian government passed the “National Strategy of Overcoming the Consequences of Ageing”. The document, containing 176 points, has established that older people should receive a suitable income, participate longer in working life and receive the best-possible access to health and social benefits in order to lead an independent, fulfilling life.<sup>410</sup> That Lithuania’s government is concerned about the question of a long life and an ageing population is the consequence of a comparably high standard of development, inherited from the Soviet era, which made entry to the EU for the three Baltic states possible already in 2004.

Although the number of people over 59, in proportion to Lithuania’s total population, is, at 20.9 percent, currently lower than in Western Europe, these measures have by no means been taken prematurely. In the upcoming decades, Lithuanian society will age more quickly than most other European countries. In 2050, about 38 percent of the population will most likely be 60 or older. Lithuania will then count among Europe’s oldest societies.<sup>411</sup>

Such rapid ageing is explained by the fact that the primarily Catholic Lithuanians, while they had many children during the Soviet era, now have low fertility rates, even when compared to their primarily Protestant neighbours to the north. Within twelve years, the average number of children per woman fell from over two in 1990 to 1.23 in 2002. It then began to recover gradually and is now 1.55.<sup>412</sup> Even though a part of the intermediary low can be traced to the fact that young women temporarily put off their desires for children, there will be a growing number of older people in proportion to young people in the future. This will be exacerbated by the emigration of primarily young people.

Despite all progress in social policy and economic development, the position of older people has deteriorated in Lithuania. For example, the EU estimated that the risk of poverty for people over 64 years old was 17 percent in 2005; within three years, it then rose to 30 percent. In the same period, the risk of poverty for working-age people decreased from 20 to 17 percent due to an improving economy. The relative position of the elderly thus deteriorated.\* But even using absolute criteria reveals insufficiencies: looking at the “Material Deprivation Rate”, also documented by the EU and which takes

into account non-monetary indicators such as access to warm water, quality of nutritional intake and possession of household goods, more old people (37 percent) are deemed poor than in the relative poverty-risk estimation. In the EU the situation is worse only in Bulgaria, Romania, Latvia and Poland.<sup>413</sup>

The increased poverty risk can be traced to the fact that pension growth in the boom years until 2008 could not keep pace with the growth of household income. In order to prevent the costs for the steadily rising number of pensioners from getting out of hand, the Lithuanian government already passed a comprehensive pension reform in 1995: it increased the pension age by two-and-half years and five years respectively to 62.5 years for men and 60 years for women and it also increased the number of contribution years required for pension claims. It later added a voluntary funded component to the traditional pay-as-you-go system, of which a large portion of the population has been able to take advantage.<sup>414</sup>

\* According to EU criteria, every person earning less than 60 percent of a country’s median income is at risk of poverty. The measure allows no conclusions on the absolute level of poverty in a country.

In addition to pension reform, Lithuania has created a series of labour market programmes to address the problem of demographic ageing. Its employment promotion law of 2006 guarantees preference for people over 49 in training programmes and access to many civil service jobs. It also subsidizes employers who hire older people. These measures have successfully increased the employment rate of the population between 55 and 64 years to 51.6 percent, which is five points more than the EU average.<sup>415</sup> Men have enjoyed disproportionate success, which is, however, only in part due to their higher pension age. Integrating older female employees into the labour market better, for example by creating greater opportunities for part-time work, is an important task for the future.

Further improvements in labour market conditions will also be necessary since Lithuania, measured in terms of the number of inhabitants, revealed the highest migration loss of all EU member states four years after entry to the Union. According to official figures, emigration exceeds immigration by 10,000 people annually; in reality, it is probably up to three times that many.<sup>416</sup> The migrants go, above all, to Great Britain, Ireland and Sweden in search of work; countries which entirely opened their labour markets to migrants from new member states immediately following the EU's eastern enlargement in 2004. In 2011, when the free movement of labour will be

established all over the EU, migration could even temporarily intensify. In contrast, many migrants from the east are already trying to gain access to the Schengen area by way of Lithuania.<sup>417</sup> Combined with people returning from other EU countries, these could even lead to migration gains for Lithuania in the medium-term. The experience of Spain, Portugal and Ireland shows that economic developments inspired by EU membership can transform traditional emigration countries into immigration countries.

### Varied integration success

At the beginning of 2010, 3.33 million people lived in Lithuania, about as many as live in Berlin. This was 360,000 fewer than in 1990, when Lithuania was the first country to secede from the Soviet Union. The population decrease was greatest in the eastern regions of Utena and Panevezys, where between ten and 15 percent fewer people live today than did 15 years ago. The number of older people is also higher here than elsewhere.

A large share of the Polish minority also lives in the country's east, in the rural regions around the capital of Vilnius. With 200,000 people, the Polish minority is larger than

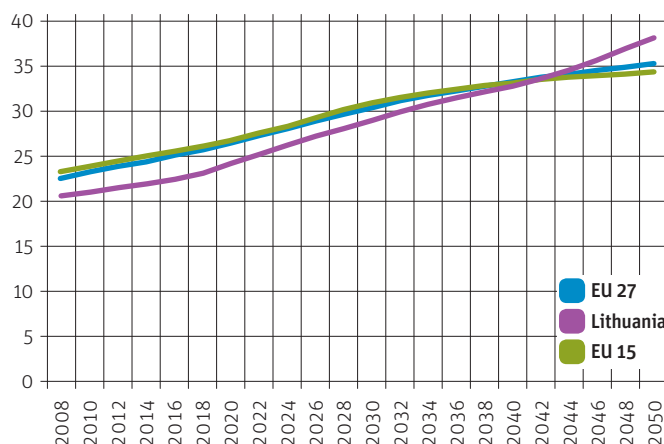
the Russian minority.<sup>418</sup> Polish settlement of Lithuania began in the 14<sup>th</sup> century, when the Lithuanian Grand Duke Jogaila married the Polish heiress to the throne, upon which followed a 400-year state union. The marriage turned Lithuanians – up until that point, Europe's last heathens – into Catholics. Unlike Estonians and Latvians, they did not convert to Protestantism during the Reformation. It was only in the wake of the Partitions of Poland at the end of the 18<sup>th</sup> century that Lithuania fell into the Czarist Empire's sphere of influence. It remained under Russian and then Soviet occupation, with the exception of the period between the First and Second World Wars, until 1990.

Despite long-lasting foreign occupation, Lithuania today is a relatively ethnically homogenous country. After all, 83 percent of the population hail from the titular people.<sup>419</sup> In contrast to the other Baltic countries, their relationship to the Russian minority is relatively good, which is also due to the fact that the latter is quite small.\* There is more often tension with the Polish

\* Reasons for the limited immigration of ethnic Russians during the Soviet era are the low degree of industrialization in Lithuania and the long-lasting partisan campaign against Soviet occupation after the Second World War.

### Lithuania is ageing faster

Lithuania's population is currently markedly younger than the EU average and, in particular, the "old" Western European member states (EU 15). Due to drastically falling numbers of children and expected increases in life expectancy, this will change in the future. As of about 2040, the number of people aged 60 and older will be higher in Lithuania than the EU average. This means that Lithuania will take the same path of development as many other Central and Eastern European countries.



Percentages of people over 59 years of age in the entire population of the EU 27, EU 15 and Lithuania, 2008 to 2050 (Source: Eurostat)

population.<sup>420</sup> Many Polish people strive for cultural autonomy, a particular thorn in the side of nationalistic organizations such as “Vilnija”, the largest of these. “Vilnija” would like to force the “Lithuanization” of the Polish population. The government also relies on assimilation: the members of ethnic minorities with Lithuanian citizenship must “translate” their last names into Lithuanian. Nonetheless, Lithuania’s minority policies have been evaluated positively by observers, primarily due to its very liberal citizenship law of 1989 allowing all people who lived legally in Lithuania in February 1989 to become Lithuanian citizens. The number of stateless people, which runs into the hundreds of thousands in neighbouring Latvia, is well under 10,000 in Lithuania.<sup>421</sup>

Due to better knowledge of the country’s language, migrants are generally more evenly distributed throughout the economy than in Estonia or Latvia. But because not every non-Lithuanian masters the language, unemployment among Russians and Poles was significantly higher than the nationwide average of 13.7 percent in 2009. The fact that a mere 5.8 percent of the labour force had been unemployed in 2008 shows, on the other hand, how unstable the employment situation throughout a broad spectrum of the population in Lithuania continues to be.<sup>422</sup> There was hardly a region which was able to counter the economic crisis: the used-car market in Marijampole, once the flourishing centre of trade between East and West, lost its Russian customers. The FlyLAL airline, located in the capital of Vilnius, had to file for bankruptcy and the liquidity of the state social security fund Sodra was acutely threatened at the end of 2009. Even the pensions, low to begin with, had to be reduced by five percent.

In addition to the economic crisis, the only nuclear power plant, Ignalina, in the country’s north, had to be shut down at the end of 2009. Electricity bills for Lithuanian households, which were already deep in debt, rose by up to one-third as a result. Before the plant closed, Lithuania had the world’s second greatest dependency, at 70 percent, upon nuclear energy following France. For security reasons, the reactor, structurally identical to Chernobyl’s, had to be shut down; it was even a requirement for entry to the EU. Since the beginning of 2010, Lithuania has had to rely more and more on energy imports from neighbouring countries. That this is risky, particularly with regard to Russia, is revealed by the experience of 2006, when Russia stopped crude oil deliveries to its neighbours through the Druzhba pipeline, officially for technical reasons, after Lithuania had sold its largest enterprise, the Mazeikiu Nafta oil refinery, to the Polish PKN Orlen instead of to a Russian company. In order to steer clear of long-term dependency on Russia, and because it will take some time until Lithuania is completely

integrated into the European power supply system, the government is planning to build a successor nuclear plant for Ignalina. At the moment, however, the project is not financially feasible.

One of the bright spots for the future, in addition to the oil refinery, is the port of Klaipeda, where, with 21 million tonnes of commodities annually, almost twice as many goods are handled as in Russian Kaliningrad 120 kilometres away.<sup>423</sup> Tourism also attracts ever-more Western Europeans to the Coronian Spit or to the country’s 3,000 lakes. And in the high-tech race, especially in bio-technology, Lithuania is comparatively well-positioned. With the aid of the world’s fastest Internet, Lithuania aims to become Northern Europe’s centre of innovation by 2020. Foreign investors are supposed to be attracted by, among other things, special economic zones and industrial parks, as they are increasingly to be found in Russia.<sup>424</sup> The comparatively well-educated workforce and a wage level which is still low in comparison with the rest of Europe are further business advantages.

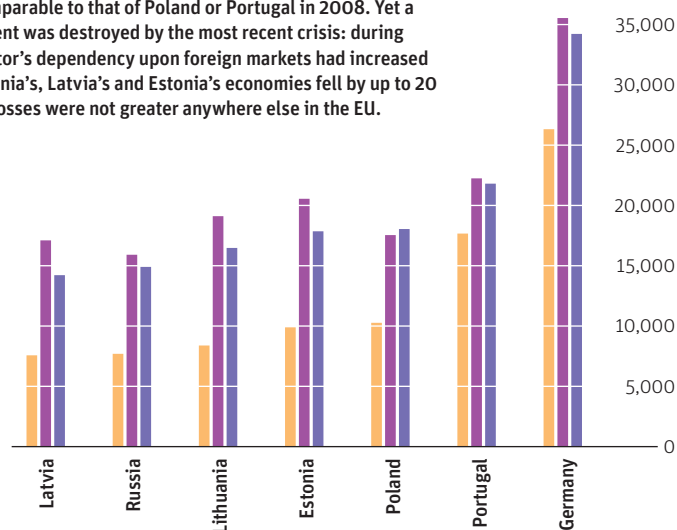
## Up and down

**In the first eight years of the new century, the three Baltic states underwent an economic boom exceeding even Russia’s. Using GDP per capita as a measure, they reached a welfare level comparable to that of Poland or Portugal in 2008. Yet a large part of this achievement was destroyed by the most recent crisis: during the boom, the financial sector’s dependency upon foreign markets had increased enormously and now Lithuania’s, Latvia’s and Estonia’s economies fell by up to 20 percent within a year. The losses were not greater anywhere else in the EU.**

GDP per capita in international dollars

2000  
2008  
2009


(Source: International Monetary Fund, World Economic Outlook Database, Washington DC)





# BELARUS

Population in 2010	9.59 million
Population in 2030 (projection)	8.56 million
Population/km <sup>2</sup> of land in 2010	46
Total fertility rate in 2005-2010	1.28
Life expectancy at birth in 2005-2010	69.1
Annual net migration 2005-2010	0
Median age in 2010	38.2

A map showing Belarus and its surrounding regions, including parts of Russia, Ukraine, and Poland. Belarus is highlighted in dark blue, while the surrounding areas are in light blue.

(Source: see page 139)

## Rural areas facing grim future

About 7.1 million people lived in urban settlements in the Republic of Belarus in 2010. This was 74 percent of the total population of 9.6 million. That makes Belarus the most urbanized Soviet successor state. In contrast to Russia or Ukraine, the absolute number of city-dwellers has even increased since the beginning of the 1990s, despite the fact that the population has been shrinking nationwide.<sup>425</sup>

The differences between the city and the country in Belarus, which is extensively covered by forest and moors, are enormous. Rural areas were little valued and largely neglected during the Soviet era, when industrial cities were regarded as a sign of progress. Planners often deemed villages as “not promising” and resettled the population, cutting off many areas from further development. Meanwhile, the government turned cities into industrial centres. Important sectors were mechanical engineering, particularly for trucks, tractors and other agricultural machinery; petrochemistry; wood processing and the foodstuffs industry.

Paradoxically, industry profited from the fact that today’s Belarus suffered more than any other area of the Soviet Union during the Second World War. At the end of the war, the republic was almost completely destroyed and the German occupation had killed more than two million Belarusians, including almost the entire Jewish population, which had numbered more than a million people before the war.<sup>426</sup> During reconstruction, planners equipped Belarus’ factories with the newest facilities, which made Belarus, in comparison to other Soviet republics which often depended upon pre-war machinery, particularly productive.<sup>427</sup>

As a result of industrialization, many Belarusians moved from the country to the cities. This migration reached its climax in the period before independence, but for entirely different reasons: after the nuclear reactor in Ukrainian Chernobyl, near the border, caused the world’s largest civil nuclear disaster in 1986, hundreds of thousands fled from the afflicted oblasts of Gomel and Mogilev to other parts of the country. A large part of the radioactive cloud rained upon Belarus and contaminated up to a fifth of the farmland and forests. In Gomel Oblast, the cases of thyroid cancer rose to six times the normal number.<sup>428</sup>

In the early 1990s, urbanization slowed down somewhat but it did not, as in Russia, become a reverse trend. After the economic crisis in the first years of independence hit, above all, industries in urban areas, it was particularly felt in the mid-1990s in rural areas. Periods of drought as well as a lack of equipment, fertilizer and fuel for agricultural vehicles have resulted in a decrease from 19 to ten percent of the employed population working in agriculture since the early 1990s.<sup>429</sup> In 1999, the year of the census, over 70 percent of Belarusian villages had fewer than 100 inhabitants. Many of these villages will disappear from the map.<sup>430</sup>

## Small demographic dividend

After the Second World War, 7.7 million people lived in the Byelorussian Soviet Socialist Republic. Stable birth surpluses led to continuing population growth for over four decades and the number of inhabitants reached 10.2 million in 1993, its historical peak, before it began to decline once again.

In fact, there are still a few islands of growth in the country, which, measuring 208,000 square kilometres, is a third smaller than neighbouring Poland. Minsk, the capital, grew between the last Soviet census in 1989 and 2009 from 1.6 to 1.8 million inhabitants, due primarily to immigrants from other parts of the country. Among Belarus' six other regions, only the more rural areas of Brest and Grodno have been able to maintain fairly constant numbers of inhabitants. Even if the numbers of children per woman, at 1.64 and 1.57 respectively, are substantially higher than the national average, they are not sufficient to maintain population stability in the long-term.<sup>431</sup> Nonetheless, fertility rates since 2004 have recovered a bit from the period in which, at 1.2, they reached their historical nadir.<sup>432</sup>

## Urban growth in the west

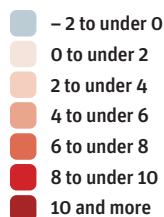
Despite the nationwide population decline, the urban population in Belarus has grown since 1991. Brest and Grodno Oblasts, which border Poland, have indeed lost three and seven percent of their populations respectively since independence, but the populations of their cities have each grown by nine percent. The reason for this has to do both with the young population structure in the cities, which has resulted in birth surpluses, and country-to-city migration which could already be observed in the 1960s. In the eastern part of the country, the average number of children per woman is lower than that in the western part, which means that mortality surpluses, even in the cities, cannot be compensated for by immigration.

Yet young people, above all, are migrating to urban centres. The less-mobile elderly remain in the countryside, which is why the trend of more people dying than being born there will only intensify in the future. About 30 percent of the rural population was already ready for retirement in 2009; nationwide, this group only constituted 21.5 percent of the population. At the same time, 33.5 percent of all women in rural areas were between 15 and 44 years old, meaning potential mothers, while the share of this age-group constituted 41.8 percent nationwide. In 2008 alone, the rural population shrank by 58,000 people, half of which was due to mortality surpluses.<sup>433</sup>

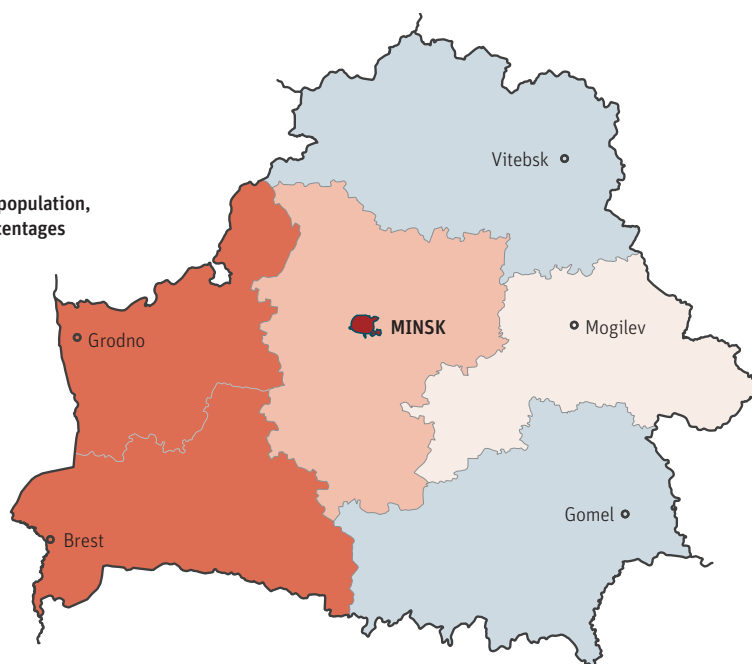
A significant number of deaths in rural areas can be attributed to alcohol abuse, accidents, suicide and other “unnatural” causes. Many villagers, particularly men, who have no economic prospects, lead self-destructive lives. This behaviour has contributed decisively to the fact that people in Belarus now die on average at 70.5 years old, earlier than in the 1970s. In rural areas, people have an average life expectancy of a mere 66.6 years.

In spite of all this, mortality surpluses in Belarus have declined in the last few years. In urban areas, the number of newborns in 2007 exceeded deaths for the first time since 1997, even though the average number of children per woman is remarkably lower here than in the countryside.<sup>434</sup> That this does not constitute a long-term trend, however, is revealed by a glance at the population structure: since the beginning of the century, the large cohorts born between 1983 and 1986 have reached childbearing age, while, at the same time, the thinned-out cohorts of the Second World War have reached retirement age. These are good times for the labour market and state revenues. But this “demographic dividend” has long been used up. This is recognizable from the fact that the ratio of children and pensioners to people of working-age shifted in 2009 in favour of the young and old, who must be taken care of by society, for the first time since 1993.<sup>435</sup>

Change in the urban population, 1991 to 2009 in percentages



(Source: Belstat, Naseleniye Respubliki Belarus, Minsk)



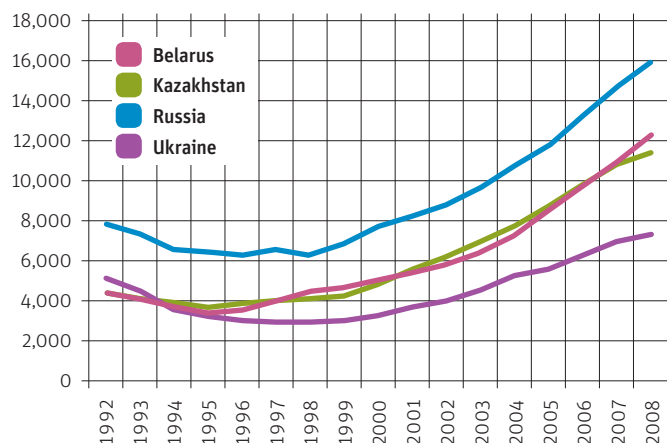
And this so-called “dependency ratio” will increase: in the future, the low-birth generations of the 1990s will reach childbearing age as the baby-boomer generation reaches retirement age. Even if the number of children per woman rises further, more people will die than will be born. According to estimates, the population of Belarus could shrink by 2030 to 8.5 million people or by about twelve percent despite immigration.<sup>436</sup>

Belarus is the only Soviet successor state to which more people have migrated from every other Soviet successor state than emigrated since the beginning of the 1990s.<sup>437</sup> This is due to the fact that many ethnic Belarusians have returned to the land of their ancestors from other parts of the former Soviet Union as well as to the fact that ethnic Russians, in contrast to Central Asia or the South Caucasus, have not extensively left the country. Their share of the total population sank negligibly between 1989 and 1999 from 13 to 11.4 percent.<sup>438</sup> The reason for this is the extraordinarily successful “Russification” of the country following the Second World War. Relations between the ethnic groups are good and both the Russian and Belarusian cultures have mixed extensively. This is also revealed by the fact that the Belarusian language in its pure form is almost exclusively spoken in urban, academic circles even though it has been an official language since 1990. Since 1995, Russian has been the second official language of the Republic of Belarus. The majority of the population speaks a dialect called “Transianka”, a mix of Belarusian and Russian.

## Unsteady upswing

Belarus, which was economically weaker than Kazakhstan and Ukraine in 1992, has meanwhile exceeded the two other former Soviet countries in economic strength, profiting from cheap energy imports from Russia. The Belarusian refineries turned crude oil into fuel and resold it with large profit margins. In this way, Russia subsidized its neighbour with several billion US dollars annually. In the meantime, however, this source of revenue has dried up.

**GDP per capita in four Soviet successor states in international dollars, 1992 to 2008**  
(Source: International Monetary Fund, World Economic Outlook Database, Washington DC)



## The Soviet Union’s most Soviet relic

In hardly any other Soviet successor state have the former structures of the planned economy been maintained so well. The country is internationally isolated and its borders are largely closed to migrants. Annual migration is thus low and has barely affected demographic developments: in 2008, there were 17,000 international immigrants and 9,000 emigrants.<sup>\*439</sup> With its restrictive migration policies and targeted border controls, the autocratic Belarusian leadership attempts to hinder foreign aid to the opposition. Belarus also manages thereby to create a kind of bulwark against illegal transit-migration of people who traverse Belarusian territory on their way to the European Union.<sup>440</sup>

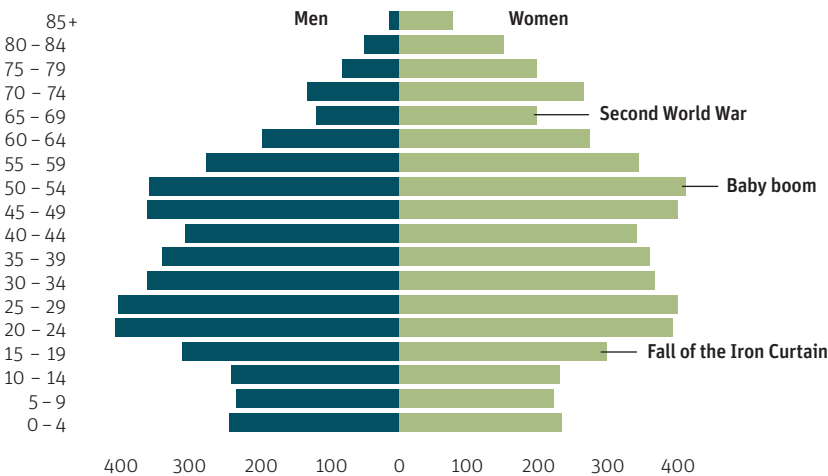
Economic figures from Belarus should be treated cautiously. They are often deliberately manipulated by the state, which largely controls the economy. According to official figures, Belarus, measured in terms of GDP per capita, is poorer than the Baltic states and Russia but richer than its southern neighbour, Ukraine. In 2008, every inhabitant generated an average of 12,300 international dollars or almost 70 percent more than citizens of Ukraine, which had a higher GDP than Belarus at the beginning of the 1990s. Between 1997 and 2008, Belarus’ economy grew by an average of eleven percent before the worldwide crisis in 2009 quelled growth to 3.4 percent.<sup>441</sup>

\* Since many emigrants do not notify authorities, net emigration may now be slightly negative.

With its system of “market-oriented socialism”, president Alexander Lukashenko’s government keeps the prices of many commodities low while it simultaneously prints new money in order to finance further growth. Important sectors such as the pipeline and electricity networks, the banking system, agriculture and heavy industry are either entirely or extensively controlled by the state and half of all employed people are paid from public coffers.<sup>442</sup>

History’s echo

Even generations later, the Second World War and the post-war baby boom affect Belarus’ population structure. The labour market in Belarus, for example, has profited in the last several years from the fact that the thinned-out war generation has entered retirement while at the same time baby boomers have reached childbearing age. Nationwide birth surpluses have been the result. In the upcoming years, the situation will worsen dramatically, however, when the sparse cohorts of the 1990s reach childbearing age.



Population of Belarus according to age-group in thousands, 2010 to 2015  
(Source: United Nations, World Population Prospects: The 2008 Revision Population Database, New York)

Ambivalent relationship to Russia

The dependency of the Belarusian economy upon Russia, its large neighbour and ally as well as the most important sales market for Belarusian export goods, is problematic. Furthermore, the Russians supply Belarus with fossil fuels at bargain prices. The resale of refined crude oil from Vitebsk and Gomel Oblasts long generated large profits for Belarus. But because it largely failed to give Russia its share of the profits, as contractually agreed upon, the Kremlin levied an export tariff on oil for the first time in 2007, plunging Belarusian refineries into the red.

The situation is similar for the natural gas trade. While Russia supplied its neighbour at the highly subsidized domestic price until 2004, it has since gradually raised the price to meet world market levels. As with the oil conflict, Belarus has generally responded to the new price hikes with higher transit fees for the use of its national pipelines pumping Russian gas to Europe. But Russia has the upper hand: in 2007, Gazprom acquired a 50-percent share in Beltransgas, the Belarusian pipeline operator, for 2.4 billion

US dollars.<sup>443</sup> Moreover, the Nord Stream pipeline, which is currently being built, will make it possible as of 2012 to bypass Belarusian territory and to supply Europe directly.

Belarus’ government has by now realized that dependency upon Russian subsidies will lead sooner or later to a crisis. Besides modernizing its economy, whose upswing in the last decade is only partly explained by increased productivity, the government created a list of 147 state companies to be privatized by 2010. These include national gems such as the pipeline operators and the potassium fertilizer producer Belaruskali. President Lukashenko sees China, especially, as an important partner in the future.

Despite these changes, Russia remains the country’s most important international partner. Following gas pipelines, Russian firms have long been trying to acquire shares in oil refineries from Belarus. Trans-border investments could be facilitated if the customs union founded in 2010 jointly by Belarus, Russia and Kazakhstan can be expanded, as planned, to a common market. This has already boosted trade between Belarus and Russia. Furthermore, its eastern neighbour is by far the Belarusian regime’s largest creditor. Between 2007 and 2010 alone, the Kremlin provided three billion US dollars in loans.<sup>444</sup> And even the construction of the first Belarusian nuclear plant agreed upon in 2008, intended to make Belarus less dependent on Russian gas supplies two decades after Chernobyl, is only possible with the help of the Russian firm Atomstroieksport.

# REPUBLIC OF MOLDOVA

Population in 2010	3.58 million
Population in 2030 (projection)	3.18 million
Population/km <sup>2</sup> of land in 2010	106
Total fertility rate in 2005-2010	1.50
Life expectancy at birth in 2005-2010	68.4
Annual net migration 2005-2010	– 34,000
Median age in 2010	36.2



(Source: see page 139)

## Abandoned Garden

In 2008, 4,967 Moldovans were granted additional Romanian citizenship.<sup>445</sup> If the Romanian president Traian Basescu gets his way, twice that many will soon become citizens annually. Basescu has declared it a “blood obligation” to incorporate Moldovans into Romania, following a tug of war over the land-locked country which has persisted between Romania and Russia since the 18<sup>th</sup> century.

The Moldovans are happy to take on second citizenship as it facilitates travel to European Union countries, the dream destination of almost all of Moldovans. At home, in Europe’s poorest country, once called the “Garden of the Soviet Union” for its fertile soil, there is hardly any work. About 400,000 people left the country between the censuses in 1989 and 2004 alone. Of the 3.38 million remaining, another 273,000 stayed abroad in 2004; by now, probably more do so. They find jobs in Russia or Ukraine, as well as in Italy, Portugal and Romania. As in Russia,

the Moldovans have no communication problems with their neighbours to the west due to Moldovan being a Romance language. The only difference to Romanian was that, until the end of the Cold war, Moldovans were ordered by the Soviet leadership to use the Cyrillic alphabet only.

Rural areas especially are suffering from labour migration. Those who do not go abroad try to find their fortune in Chisinau, the capital, home to 660,000 inhabitants or more than a third of the nation’s urban population.<sup>446</sup> That urban areas have nonetheless shrunk more than rural areas since independence is owing to the fact that in the 1990s, Russians and Ukrainians who had lived primarily in cities left the country.<sup>447</sup>

In addition to economic uncertainty, there was the civil war of 1992, sparked by the secession of the Transnistria province on the Ukrainian border. A large portion of the primarily Slavic population in this strip of territory east of the Dniester River feared that the Republic of Moldova would attempt annexation to Romania following independence and suppress Russian language and culture. In contrast to the Gagauz people, who are of Turkic ancestry and live in the southern part of the country, the Transnistrian leadership rejected the offer of partial autonomy within Moldova. Moldova itself could not afford to relinquish Transnistria, since important economic enterprises were located there. Today, almost 20 years following the cease-fire, the problem remains unresolved. Transnistria does, in fact, have its own government, currency and police force, but so far, not a single UN member state has officially recognized it.

Losing Transnistria meant that Moldova has lost about a third of its industry. The loss of power plants was particularly painful and led in the 1990s to frequent power failures. This, in addition to the impoverishment of a large portion of the population, inspired Moldovans in 2001 to re-elect a Communist government – so far unique in a Soviet successor state. Indeed, the Communist leadership did supply continuous electricity, but failed to get a handle on corruption and had to make way in 2009 for the western-oriented opposition. The opposition's main task now is to solve the Transnistrian conflict in order to earnestly pursue Moldova's goal of EU membership.

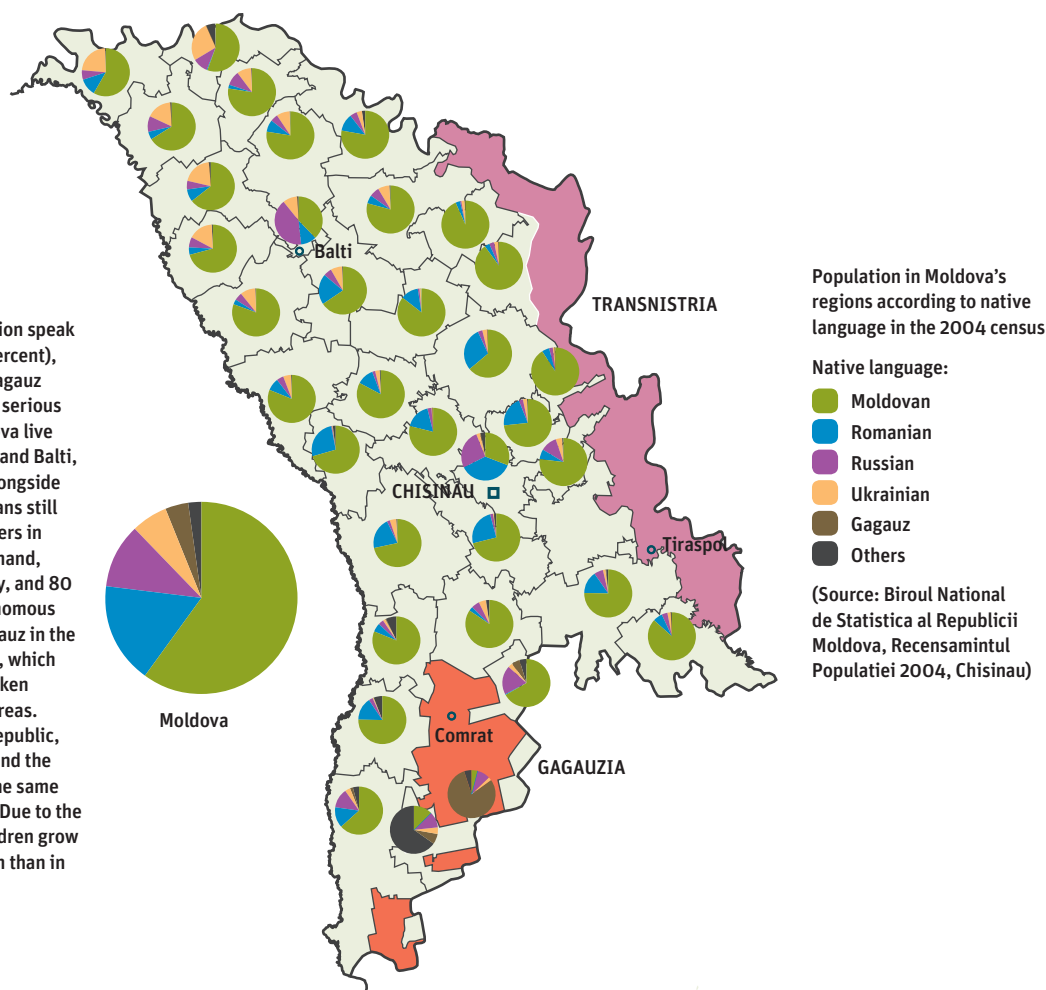
## High wages are only paid abroad

There is contradictory data regarding Moldova's current population size. According to United Nations estimates as well as figures by the National Bureau of Statistics, about 3.6 million people live in the country. But while the international organization includes Transnistria's 500,000 citizens, national data exclude them.<sup>448</sup> In light of the fact that the 2004 census already counted but 3.4 million people, national data seem too high: since the census, the population has probably decreased, due not only to emigration but to the fact that since the end of the 1990s more people die than are born here.<sup>449</sup>

Taken together, Moldova and Transnistria have lost about 800,000 people or 18 percent of their inhabitants since 1989; as a percentage, this is the greatest decrease in any post-Soviet state. Nonetheless, the country still has the greatest population density with 106 people per square kilometre. About 60 percent of the people live in rural areas,<sup>450</sup> where it is particularly difficult to find decently-paid work. Agriculture may still employ about 40 percent of the working-age population, but average monthly earnings barely exceed the official subsistence minimum of 1,100 Lei, which, converted, corresponds to about 70 euros. Many people even continue to be paid in kind.<sup>451</sup>

## One-and-a-half countries, five languages

About 60 percent of Moldova's population speak Moldovan, followed by Romanian (17 percent), Russian (eleven), Ukrainian (six) and Gagauz (four). These figures, however, obscure serious regional differences. Russians in Moldova live primarily in the large cities of Chisinau and Balti, where their language is widespread. Alongside native Russian speakers, many Moldovans still use the language of their former occupiers in everyday life. Ukrainians, on the other hand, live primarily in the north of the country, and 80 percent of the inhabitants of the "Autonomous Territorial Unit of Gagauzia" speak Gagauz in the southern part of the country. Romanian, which is hardly distinct from Moldovan, is spoken primarily by the population in central areas. There is no data for the Transnistrian Republic, since it did not take part in the census and the results of its own population count in the same year have not been published in detail. Due to the population's ethnic make-up, more children grow up here speaking Russian and Ukrainian than in the rest of the country.





Thanks to the land reform of the 1990s, in the wake of which two-thirds of the country changed from state to private hands, a new rank of peasant farmers has emerged. They tend small plots of about two hectares to provide for their own needs. How little they still produce is revealed by the fact that the average agricultural family business in most EU countries has between 17 and 70 hectares at its disposal. Moldovans, on the contrary, do not even tend continuous plots of land, since every individual received a share in farmland as well as in orchards and wine-growing regions. To more than half of the farmers, working the land under such conditions does not seem worth the trouble. They lease the land to enterprises which can make significantly higher profits with mid-sized plots of up to 800 hectares.<sup>452</sup>

If this trend continues and productivity increases further, many of those employed in the fields will lose their jobs. This could produce the next group of emigrants. So far, it has been primarily well-educated civil servants, who frequently earn less at home than construction workers, who have gone abroad. And it is as construction workers that most of these emigrants earn their money in foreign countries.<sup>453</sup> They often transfer over half of their income to their families back in Moldova. In 2008, there were official remittances of 1.9 billion US dollars, which was about 31 percent of Moldova's GDP.\* Only Tajikistan and Tonga are more highly dependent upon labour migrants.<sup>454</sup>

\* Since up to half of the money transfers were made using informal channels, dependency upon remittances are probably significantly higher than officially recorded.

## Few children, often alone

Since independence, having children has become a luxury in Moldova. This is also due to the fact that high inflation rates in the 1990s rendered state subsidies for young families virtually worthless. Between 1990 and 2002 alone, the average number of children per woman decreased by half, from 2.39 to 1.21, before rising slightly again to 1.33 in 2009.<sup>455</sup> In reality, it could even be somewhat higher, as official statistics overestimate the actual population size and thus the number of potential mothers. 1.5 children per woman, as estimated by the United Nations, may be more realistic.

In addition to material hardship, greater individual freedom for women has also played a role in the decreasing number of children. Prior to independence, Moldovan women married and had children very young. Since independence, they take more time searching for a partner and have children when they are significantly older. Since 1990, the annual number of marriages has decreased from 41,000 to 27,000, or by 35 percent; marriages of women under 20 years old, which constituted a third of all weddings prior to independence, have gone down by 75 percent.<sup>456</sup>

Since many adults work abroad, up to one-third of all children in Moldova grow up with a single parent or no parents. Due to their parents' remittances, these children have fewer financial worries, but they often feel abandoned and alone, develop aggressive behaviour and have difficulties in school. This is particularly true when it is the mother who lives abroad and the children need to take over household responsibilities, leaving little time for friendship and a "normal" childhood. In the past few years, however, it has been observed that more and more migrants try to take their children with them.<sup>457</sup> This requires that migrants live legally in their new country and have regular work. This is easier in the EU than it is in

Russia, where primarily the poorer rural population seeks its fortune. Despite bilateral labour agreements and governmental legalization programmes, almost half of all migrants commute seasonally between their homeland and their place of work in Russia. They do not seek permanent residency permits.<sup>458</sup>

Due to continuing wage differentials, an increasing number of young Moldovans see their future abroad. In a survey conducted by the National Bureau of Statistics, 70 percent of all 15 to 29-year-olds said they would go abroad to work if they had the opportunity. Over half of them would even take on a job for which they were overqualified in their target destination.<sup>459</sup> The unconditional desire to leave their homeland often drives young women into the hands of human traffickers, who promise lucrative jobs in Russia, the Middle East or Western Europe. A life of prostitution frequently lurks behind these promises. If the women manage to free themselves and return to their homeland, they are usually faced with their next ordeal, for Moldovan society often excludes and stigmatizes former prostitutes.



# UKRAINE

Population in 2010	45.43 million
Population in 2030 (projection)	40.19 million
Population/km <sup>2</sup> of land in 2010	75
Total fertility rate in 2005-2010	1.31
Life expectancy at birth in 2005-2010	68.2
Annual net migration 2005-2010	– 16,000
Median age in 2010	39.5



(Source: see page 139)

## A sleeping giant between the EU and Russia

Ukraine's longest river, the Dnieper, divides the country in half, flowing from north to south past the metropolitan cities of Kiev and Dnepropetrovsk before emptying into the Black Sea near Kherson. For Ukrainians, the Dnieper is not only a symbol of national unity, but also of the internal divisions between east and west. Despite numerous claims to the contrary, Ukraine is in no danger of falling apart, but large differences do exist between the economies and the inhabitants in the eastern and western parts of the country.

The western half of the country is more agrarian. Over the past centuries, parts of it belonged to Poland, Lithuania, Austria, Czechoslovakia and Romania. Its largest city Lviv – formerly the Austrian city of Lemberg – is home to 734,000 people.<sup>460</sup> Lviv is surrounded by the economically weak oblasts of Ternopil and Zakarpattia.<sup>461</sup> In the eastern half, there are numerous coal mining operations, steel works and a higher percentage of Russian inhabitants. The country's two economic powerhouses, the oblasts of Donetsk and Dnepropetrovsk, are located in the Don River delta region on the Sea of Azov. However, the burgeoning economy has caused damage to the environment in these districts, where mining

and heavy industries have contaminated the air, water and soil for years.<sup>462</sup> This is certainly one of the reasons why Ukraine's average life expectancy is four years lower in the east than in the west.<sup>463</sup> Furthermore, drug abuse and prostitution have led to a surge in HIV infections in the urbanized eastern half. An estimated 1.6 percent of the adult population in Ukraine is HIV-positive – the highest rate in all of Europe.<sup>464</sup>

### The chaotic 1990s

After gaining independence in 1991, Ukraine slid into an economic crisis far more severe than those suffered by most of the other post-Soviet states. Ukraine's industrial production fell by 50 percent within one decade. Real GDP steadily decreased every year until 1999. In 1992, Ukraine was the fourth wealthiest state in the territory of the former Soviet Union based on per capita GDP, following Russia, Lithuania and Estonia. By 2010, it had sunk to eighth place, surpassed by Latvia, Azerbaijan, Belarus and Kazakhstan, with possibly Turkmenistan soon to follow.<sup>465</sup> In the tumultuous years following the collapse of the Soviet Union, clan structures formed which still influence the economy and politics in Ukraine.

It did not take long for the catastrophic economic situation to leave its mark on the country's demographics; the birth rate sank, more people died prematurely, and many fled the country. Out of the 51.9 million Ukrainians who lived to see their country gain independence, less than 46 million people remained at the beginning of 2010.<sup>466</sup> Almost 90 percent of this decrease is due to the disparity of birth and mortality rates, which as a percentage of the population is even higher than in Russia or Belarus.<sup>467</sup> In 1990, Ukrainian women had an average of 1.84 children, but in 2001, the average had fallen to 1.09.<sup>468</sup> Meanwhile, the average has risen to 1.46 children per woman, yet the rates vary considerably depending on the region. Volhyn, Rivne and Zakarpattia Oblasts bordering the EU register fertility rates higher than 1.8 children per woman, while the north-eastern oblasts of Sumy, Kharkiv and Luhansk report averages below 1.3.<sup>469</sup> There are various reasons for this disparity. For example, western Ukraine is home to a large percentage of rural dwellers who traditionally value religion and family to a larger degree than those in the east. Furthermore, modern contraceptives are not as prevalent in the west as they are elsewhere in the country.<sup>470</sup>

In 2005, the government began funding a generous family support programme, aimed at encouraging Ukrainian women to have more children. This included significantly expanding the financial support for families with young children up to three years of age. Such measures may well have contributed to the recent rise in fertility rates. In the long-term, however, financial incentives like birth benefits will not be enough to reverse the population loss. Poverty and unemployment are not the only causes of low birth rates. The fact is that more and more Ukrainian women are simply choosing to have children later and wish to focus instead on advancing their professional careers.<sup>471</sup>

Looking for work abroad

In contrast to Russia, it took quite some time for Ukraine to attract migrant workers from other countries. Following independence, many Ukrainians – and descendants of the

Crimean Tatars who had been deported by Stalin – returned to their home country from the former Soviet republics. However, by 1994, the migration flows began reversing when hundreds of thousands moved to neighbouring Russia in response to the persistent economic crisis. Others – including many soldiers – left Ukraine in the wake of the collapse of the Soviet Union to seek citizenship in another country. Although the exodus slowed down considerably in the following years, tens of thousands of Ukrainians departed for Russia in search of work every year.<sup>472</sup> An equal number, if not more, chose to head west and seek employment in the EU, the United States or Canada. In most cases, they entered these countries with a regular tourist visa, which enabled them to remain there legally for only the first few months.<sup>473</sup> Ukraine is currently negotiating a visa-free travel regime with the EU as part of its planned Association Agreement. This could make it easier for migrant workers to enter the European Union in the near future.

Since 2005, Ukraine has registered a slight immigration surplus – primarily the result of a drop in emigration.<sup>474</sup> However, various studies in recent years have shown that the official statistics do not correctly reflect the extent of emigration. Many leave the country without notifying the authorities of their change in residence, and a majority of migrant workers live in Ukraine but commute to their workplace across the border.<sup>475</sup> Although they are registered as Ukrainian residents, they earn their living in another country altogether. An estimated two to 2.5 million Ukrainian residents work abroad, i.e. one in ten working-age Ukrainians.<sup>476</sup> The western half of the country has suffered the heaviest losses as a result. Up to 30 percent of the working-age population in the oblasts of Zakarpattia, Chernivtsi, Lviv and Ternopil have already left the country. Most of these emigrants work in Eastern and South-Eastern Europe, e.g. in Poland, Czech Republic, Italy or Portugal. There are also many people leaving Luhansk Oblast in eastern Ukraine. These migrant workers generally move to

Increasing imbalance

Demographic ageing in Ukraine is not as pronounced as in many Western European countries. The higher age-groups comprise only a small proportion of the current total population. This can be attributed, among others, to the catastrophic impact of World War II and the famine of 1932 and 1933, caused by Stalin's policies which claimed an estimated 3.5 million Ukrainian lives. In the coming decades, the largest demographic groups will advance in age and reach (today's) retirement age until the middle of the century.

Ukraine's population by sex and age-group in 1,000 persons, 2010, 2030 and 2050  
(Source: United Nations, World Population Prospects: The 2008 Revision Population Database, New York)



Russia as it offers better economic and social conditions.<sup>477</sup> The central and southern areas of Ukraine, on the other hand, have seen the largest influx of migrant workers. International and internal migrants are attracted to the growing capital of Kiev, the Crimean peninsula, the province of Odessa on the Black Sea and Kharkiv, the second-largest city in Ukraine.<sup>478</sup>

According to United Nations projections, Ukraine's population may shrink by more than five million people by 2030. To prevent this from happening, Ukraine must find a way to both curb the demographic loss of labour emigration and attract larger numbers of immigrants. This could also slow down the ageing of its society, which is increasingly becoming a problem as more young people leave the country and fewer children are born. But the question remains: where will these immigrants come from? Although Ukraine has a higher income level than many countries in the region, the potential number of immigrants from neighbouring states will not suffice to close the demographic gap completely. As a result, it is rather unlikely that the second-most populous post-Soviet state can prevent its workforce from rapidly shrinking; the number of working-age Ukrainians already decreased by 400,000 in 2010.<sup>479</sup>

### Few new economic sectors

During the Soviet era, Ukraine's economy was closely interwoven with Russia's. The weapons and space industry, in particular, manufactured components and finished products for its northern neighbour. The engineering sector was badly hit when these economic ties were cut. Even today, Ukraine has not yet fully recovered. But not all was lost. Ukraine continues to sell its Antonov-

brand aircrafts as well as "Cyclone-4" and "Mayak" missiles on the world market. One of the reasons why Ukraine is able to produce such high-tech products is because of its relatively large pool of well-educated workers.

In addition to manufactured goods, Ukraine exported coal, steel and foodstuffs during the Soviet era. Many of these sectors still exist today. Coal is still mined in the Donets Basin and either exported or sold to the local steelworks at lower-than-market prices. The exports of Ukraine's energy-intensive steel industry are the backbone of the national economy. Agriculture is also a traditionally strong sector. Corn and sunflowers are cultivated near the Black Sea in the oblasts of Odessa, Mykolaiv, Kirovohrad and Kherson. Fruit and vegetables are produced along the coast and there is even a wine-growing industry on the Crimean peninsula. Wheat production plays a vital role throughout the country. Ukraine is the world's fifth largest wheat exporter after the USA, Canada, Russia and Australia.<sup>480</sup> Farmland accounts for 54 percent of the country's surface area, the majority of which lies on extremely fertile chernozemic soils. Aside from Bangladesh and Moldova, no other country in the world has a higher percentage of agricultural land.<sup>481</sup>

Between 2000 and 2008, per capita GDP in Ukraine increased from 3,300 to 7,400 international dollars.<sup>482</sup> However, the economy started overheating due to rising world-market prices for export commodities and capital inflow from abroad, while the national currency, the hryvnia, remained pegged to the US dollar. In May 2008, the annual inflation rate had soared to more than 30 percent – at the time the third-highest inflation rate in the world after Zimbabwe and Venezuela.<sup>483</sup> As a consequence, the crisis that followed hit home all the harder. Capital inflows from foreign banks fell to a trickle practically overnight and the world-market prices for steel and chemical products collapsed in the second half of 2008. The Ukrainian banking system tottered at the brink of bankruptcy and a wide array of industrial sectors was forced to drastically cut production. Within one year,

the country's GDP had fallen by 15 percent and industrial production by 22 percent.<sup>484</sup> The economic slump translated into an official unemployment rate of 8.8 percent in 2009, though this did not accurately reflect the true scale of the crisis. The Ukrainian unemployment rate accounts for the entire population between the ages of 15 and 70. But because most 60 to 70-year-olds are already retired, they suffer very little unemployment.<sup>485</sup> Other figures illustrate the scale of the crisis far better. For example, 20 percent of young urban workers between 15 and 24 years of age were unemployed and the percentage of short-time work increased from eleven to 19 percent.<sup>486</sup> In addition, employees were forced to accept massive wage cuts.<sup>487</sup>

### Backlog of reforms after the crisis

Although the economy recovered in 2010, per capita GDP in Ukraine is only half of that in Romania, the poorest member state of the EU.<sup>488</sup> Clearly, Ukraine still has a long way to go until it can finally become a member of the European Union. In order to take the necessary steps to achieve that goal, to offer its citizens secure and rising incomes in the long-term and stop the flow of emigration, Ukraine has no alternative but to enact far-reaching reforms. And there are a myriad of problems that need to be addressed. For example, 50 percent of the production facilities are considered outdated, steel production devours huge amounts of energy, its coal is too expensive and of poor quality and agricultural yields – especially in the western half of the country – have long been lower than they could be. The most serious problems in Ukraine, however, are political instability and corruption, which continue to scare off foreign investors.

Many of the country's problems are evident in the energy sector. Before energy consumption dropped as a result of the economic crisis, Ukraine consumed about 70 billion cubic metres of natural gas each

## The east is shrinking faster

Although eastern Ukraine is economically stronger than the west, it finds itself in a demographically difficult situation. Women in the western-lying oblasts have more children than their counterparts in the east and its population lives significantly longer on average. In the industrial areas, such as Donetsk and Dnepropetrovsk, environmental pollution and hazardous work conditions in the coal mines contribute to a lower life expectancy. In addition, the severe economic crisis in the 1990s drove many of the laid-off workers to alcohol and drugs – an HIV epidemic was the result. The combination of all these factors has caused the population of the north-eastern Luhansk Oblast to shrink by almost 19 percent since 1989. The situation is even worse in the sparsely populated Chernihiv Oblast in the northern part of the country, which has lost more than one-fifth of its population. The capital Kiev, however, is the only district in the country which has registered growth with a population increase of six percent.



year – the most important source of energy in Ukraine, covering 40 percent of its consumption. Because domestic production cannot fully meet its requirements, Ukraine imports two-thirds of its natural gas from Russia.<sup>489</sup> For many years, Ukraine received special discounts and free shipments in “exchange” for allowing Russia to pipe its natural gas to Western Europe. The Russian monopolist Gazprom conducts four-fifths of its business in Western Europe via Ukraine’s dilapidated pipelines. But Gazprom has been gradually increasing prices to market levels since 2006, which in turn has caused financial difficulties for the Ukrainian-based Naftogaz, the state-owned natural gas producer, importer and pipeline operator, as well as the largest employer in the country.

The pricing conflict between the two countries most recently flared up in January 2009 when Russia interrupted gas supplies to Ukraine for twelve days until a new agreement had been negotiated. The agreement tied the Ukrainian price of imported gas to the oil price, as is the convention in Western Europe. This has clearly weakened Ukraine’s negotiating position. What remains are political

bargaining chips: For some time, Gazprom has shown interest in taking over Naftogaz to gain control of the entire natural gas market in its neighbouring country.<sup>490</sup> The Ukrainian government has successfully prevented the takeover so far. In April 2010, however, it granted Russia the right to station its Black Sea Fleet in Crimea for another 25 years in exchange for a 30-percent discount on natural gas imports.

In order to lessen its dependence on Russian natural gas, Ukraine will have to primarily reduce its energy consumption. There are only a handful of countries in the world which require such high amounts of energy in proportion to GDP. Central and Eastern European countries like Poland and Slovakia, and also the United States, consume half as much energy for the same economic performance, and Germany only one quarter.<sup>491</sup> Understandably, the subject of efficiency is the most important aspect of Ukraine’s energy strategy announced in 2006. The strategy calls for a three-fold increase in GDP by 2030, whereby energy consumption should increase only one and a half times the present level.<sup>492</sup> However, there are practically no incentives to invest in district heating systems and building

insulation, which would likely result in the biggest energy savings. Only now are companies beginning to install more energy-efficient production technologies. Following pressure by the International Monetary Fund, the Ukrainian government created an important incentive to use energy more efficiently when it announced it would reduce the high subsidies on natural gas and slowly increase energy prices to market levels for private households and the municipal sector.

In addition to cost-saving measures, the energy strategy also calls for a shift to renewable energies. At present, these account for only three percent of total energy consumption. The only notable area of development is hydropower with numerous hydroelectric dams on the Dnieper and other rivers.<sup>493</sup> But the government intends to change the situation. Since 2009, it has been actively promoting investment in hydropower, biomass and wind power by paying energy providers higher compensation for feeding electricity from regenerative energies into the national power grid. However, its main strategy for weaning itself from Russian natural gas has nothing to do with “green”

energies or higher energy efficiency. Rather, it plans on importing more from other countries, increasing domestic production of coal and natural gas, and expanding nuclear energy.<sup>494</sup>

Ukraine's agricultural sector, particularly strong in the heart of the country in the oblasts of Kiev, Cherkasy and Vinnytsia, is far less dependent on Russia. Following a slump in the 1990s, the sector is now growing again and contributes about 20 percent to total GDP, taking the upstream industries into account, e.g. those responsible for seed production, farming machinery and fertilizers. In 2006, the EU supplanted Russia as Ukraine's largest customer for agricultural produce. Ukraine primarily exports sunflower oil, grain and rapeseed to the West, but hardly any "processed" goods such as meat or cheese.<sup>495</sup> Trade relations could become even closer in the near future when the planned free trade agreement between the EU and Ukraine is signed. The agreement was largely made possible by Ukraine's decision to join the World Trade Organization in 2008. Of course, this simultaneously restricted its autonomy in agricultural policy, which could lead to the stability that the sector so urgently needs. In the past, especially in times of crisis, the government often interfered in markets by implementing export restrictions and price controls so that it could

meet the needs of its people. However, such measures clearly did not channel aid to the poorer segments of the population, and the producers lost potential revenues which they could have used to modernize their outdated facilities. Even today, efforts to modernize the agricultural sector are hindered by the fact that land cannot be purchased in Ukraine and is thus not available as collateral on loans.<sup>496</sup> With an underperforming agricultural sector, Ukraine fails to take advantage of its enormous potential; around the world, food prices are rising and huge markets in India and China are just waiting to be tapped.

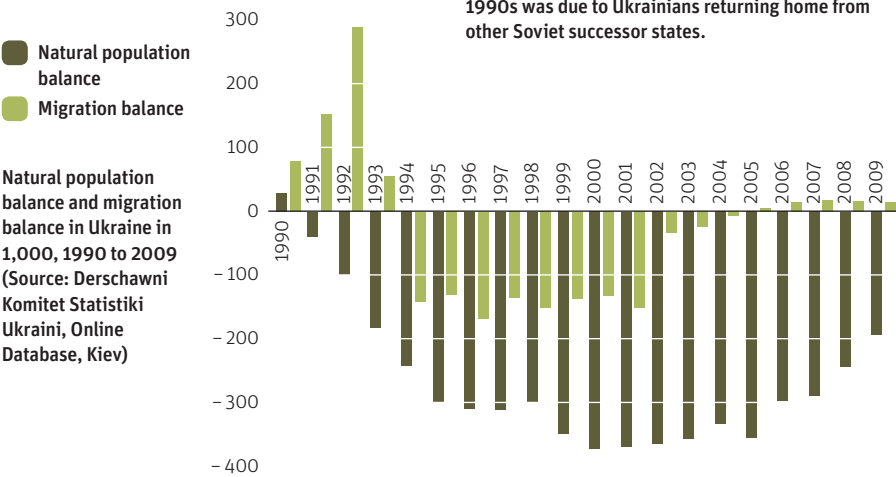
Subsistence farming accounts for approximately 55 percent of Ukrainian agricultural production – potatoes, vegetables, berries, milk and wool are almost exclusively produced in privately-owned gardens.<sup>497</sup> This ensures the survival of almost five million people in rural areas. The production has no

significance for the export business. Similarly negligible is the production of the 42,000 mid-sized family farms which account for five percent of all agricultural produce. It was the large agrarian firms, which had once been the Soviet collective and state-owned farms, which have determined Ukraine's position on the world market in the first 20 years of independence.<sup>498</sup> Only in recent years have gigantic "agriholdings" appeared on the market, similar to those in Southern Russia. They cultivate up to 350,000 hectares of agricultural land and, thanks to integrated suppliers and processing companies, have exclusive access to a closed supply chain. This allows the holdings to produce at much lower cost than many of their competitors. Although the holdings have decisively increased agricultural productivity, they are unable to stop the demographic and economic crisis gripping the countryside. In fact, because these holdings require far fewer labourers per unit of land, there are fewer jobs available to the rural population. Furthermore, the holdings are often headquartered in cities and pay their taxes there, while rural communities are in dire need of tax revenues as more and more small businesses disappear. Such businesses often provide valuable services for the rural infrastructure, for example, constructing and operating schools, kindergartens and streets.<sup>499</sup>

The larger the gap in income grows and the levels of prosperity between Ukraine's urban and rural areas diverge, the more important the social systems become. However, Ukraine has yet to establish a public health insurance programme. Although Soviet-style, free health care still exists theoretically, treatment includes little more than hospitalization. Those who pay cash up front are the ones who generally receive treatment and medication. The pension insurance system is equally ailing, as the state has to regularly prop it up with tax revenues and state credit, although the contribution rate of 35.2 percent (33.2 percent paid by the employer, two percent by the employee) is

**Excess of deaths over births explains population loss**

**In 1991, the year Ukraine gained independence, more Ukrainians died than were born for the first time since World War II. Since then, the country has been shrinking by almost 300,000 people per year as result of its high mortality rate. This trend has only abated somewhat in recent years. Emigration also led to a sharp decrease in population particularly in the 1990s. The large surge in immigration in the early 1990s was due to Ukrainians returning home from other Soviet successor states.**



extremely high compared to the international average. The fact that various professions are allowed to pay lower premiums only hurts the pension fund financially and reduces its public acceptance.<sup>500</sup> There is no easy

solution in sight; as the society ages fast and young people leave the country in search of work, the number of pensioners will increase while those who pay into the system will decrease. At least president Yanukovich has

finally signed a long-awaited bill to gradually raise the Soviet-era retirement age of 55 years for women and 60 years for men as well as to add a fully-funded component to the pay-as-you-go scheme.

## Data for Estonia, Latvia, Lithuania, Belarus, Moldova and Ukraine

		Demography					Economy				Population projection 2010-2030 (percent)
		Cluster	Total fertility rate 2009	Population aged 59 and older 2009 (percentage)	Life expectancy 2009 (years)	Net migration per 1,000 inhabitants (mean 2006-2009)	Cluster	Gross domestic product per capita 2008 (International dollars)	Expenditures on research and development 2008 (percentage of GDP)	Employment 2008 (percentage of age group 15 to 59)	
Data for Estonia, Latvia, Lithuania, Belarus, Moldova and Ukraine											
ESTONIA											
EST	Estonia	2	1.64	21.7	73.1	0.0	1	20,327	1.1	77.2	− 3.1
LATVIA											
LV	Latvia	2	1.40	22.3	72.4	− 0.9	1	17,187	0.6	77.7	− 9.0
LITHUANIA											
LT	Lithuania	2	1.34	20.3	72.7	− 6.0	2	19,114	0.8	70.7	− 11.1
BELARUS							2	12,282	0.8	71.3	− 10.5
BY1	Brest Oblast	2	1.64	18.4	71.0	− 1.3	Regional economic data are not available for Belarus.				
BY2	Vitebsk Oblast	3	1.32	20.0	69.8	− 1.0					
BY3	Gomel Oblast	3	1.50	18.3	69.6	− 0.6					
BY4	Grodno Oblast	2	1.57	19.8	70.5	− 1.9					
BY5	Minsk	1	1.24	15.2	73.2	9.4					
BY6	Minsk Oblast	3	1.51	19.3	69.0	− 0.2					
BY7	Mogilev Oblast	2	1.45	18.1	69.8	− 2.6					
UKRAINE											
UA1	Autonomous Republic of Crimea	3	1.55	19.6	69.3	1.7	3	4,951	0.5	70.0	− 5.5
UA2	Vinnysia Oblast	3	1.51	22.6	70.4	− 0.9	3	4,297	0.3	69.8	− 6.3
UA3	Volhyn Oblast	3	1.88	17.7	69.5	− 0.2	3	4,396	0.1	66.5	11.5
UA4	Dnipropetrovsk Oblast	3	1.45	20.8	67.9	− 0.1	2	11,015	0.7	70.4	− 14.5
UA5	Donetsk Oblast	3	1.29	22.1	67.7	− 0.2	3	9,273	0.4	71.5	− 19.4
UA6	Zhytomyr Oblast	3	1.60	21.4	67.8	− 1.5	3	4,113	0.1	69.4	− 15.1
UA7	Zakarpattia Oblast	3	1.83	15.5	69.2	− 1.3	3	3,786	0.2	67.6	− 1.6
UA8	Zaporizhia Oblats	3	1.36	20.9	69.6	− 0.3	2	8,276	1.0	70.0	− 15.4
UA9	Ivano-Frankivsk Oblast	2	1.60	18.4	71.7	− 0.3	4	4,610	0.3	60.9	− 3.4
UA10	Kiev Oblast	3	1.59	20.8	68.2	0.6	3	7,336	0.5	70.7	− 8.0
UA11	Kirovohrad Oblast	3	1.49	22.5	67.7	− 3.7	3	4,815	0.2	70.1	− 24.0
UA12	Luhansk Oblast	3	1.25	21.6	68.4	− 1.6	3	6,533	0.3	68.1	− 23.0
UA13	Lviv Oblast	2	1.51	19.0	71.6	− 0.4	3	4,953	0.8	66.0	− 5.4
UA14	Mykolaiv Oblast	3	1.45	19.6	67.7	− 0.6	2	5,762	1.1	68.8	− 16.1
UA15	Odessa Oblast	3	1.58	19.1	68.1	3.2	3	6,996	0.4	67.3	− 1.7
UA16	Poltava Oblast	3	1.35	22.6	69.3	− 0.1	3	8,007	0.1	70.9	− 18.8
UA17	Rivne Oblast	2	1.92	16.9	69.6	− 1.5	3	4,352	0.1	65.0	− 1.2
UA18	Sumy Oblast	3	1.24	22.1	69.2	− 1.5	3	4,853	0.8	69.8	− 21.3
UA19	Ternopil Oblast	2	1.48	20.5	72.0	− 1.5	4	3,451	0.1	61.2	− 11.7
UA20	Kharkiv Oblast	3	1.25	20.6	70.1	1.3	2	7,586	2.2	69.7	− 8.5
UA21	Kherson Oblast	3	1.50	19.3	67.9	− 2.3	3	4,255	0.3	69.5	− 21.2
UA22	Khmelnyskyi Oblast	3	1.56	21.9	70.1	− 0.9	3	4,228	0.1	70.1	− 11.2
UA23	Cherkasy Oblast	3	1.35	23.1	69.9	− 0.2	3	5,167	0.3	70.2	− 17.3
UA24	Chernivtsi Oblast	2	1.53	18.5	71.8	0.7	3	3,462	0.3	65.3	− 3.8
UA25	Chernihiv Oblast	3	1.34	24.9	67.9	− 0.7	3	4,682	0.3	71.4	− 21.0
UA26	Kiev	1	1.30	16.9	72.7	8.3	2	21,826	1.9	74.1	14.2
UA27	Sevastopol	1	1.45	20.6	69.7	5.4	2	5,880	1.7	73.6	6.7
REPUBLIC OF MOLDOVA											
MD	Republic of Moldova	4	1.50	14.9	68.4	− 9.4	4	3,004	0.6	50.3	− 11.6



# THE SOUTH

GEORGIA

ARMENIA

AZERBAIJAN

KAZAKHSTAN

UZBEKISTAN

TURKMENISTAN

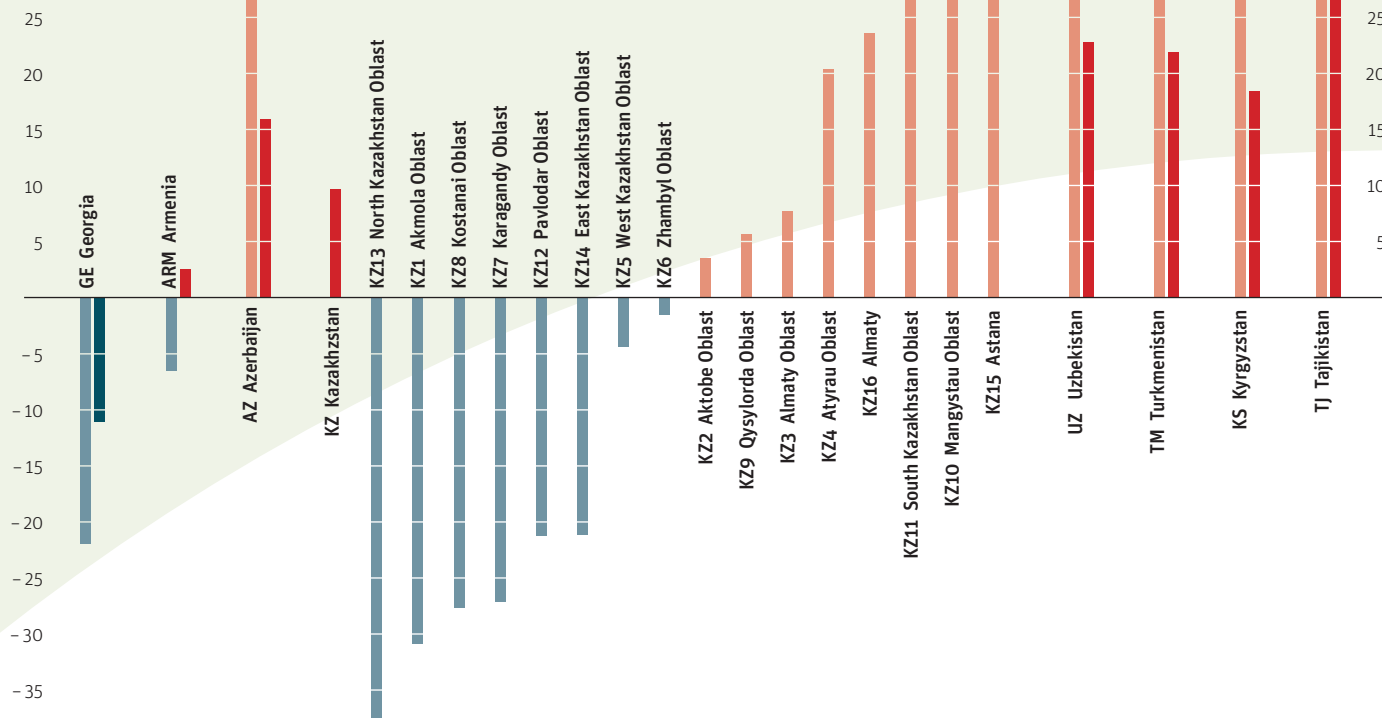
KYRGYZSTAN

TAJIKISTAN

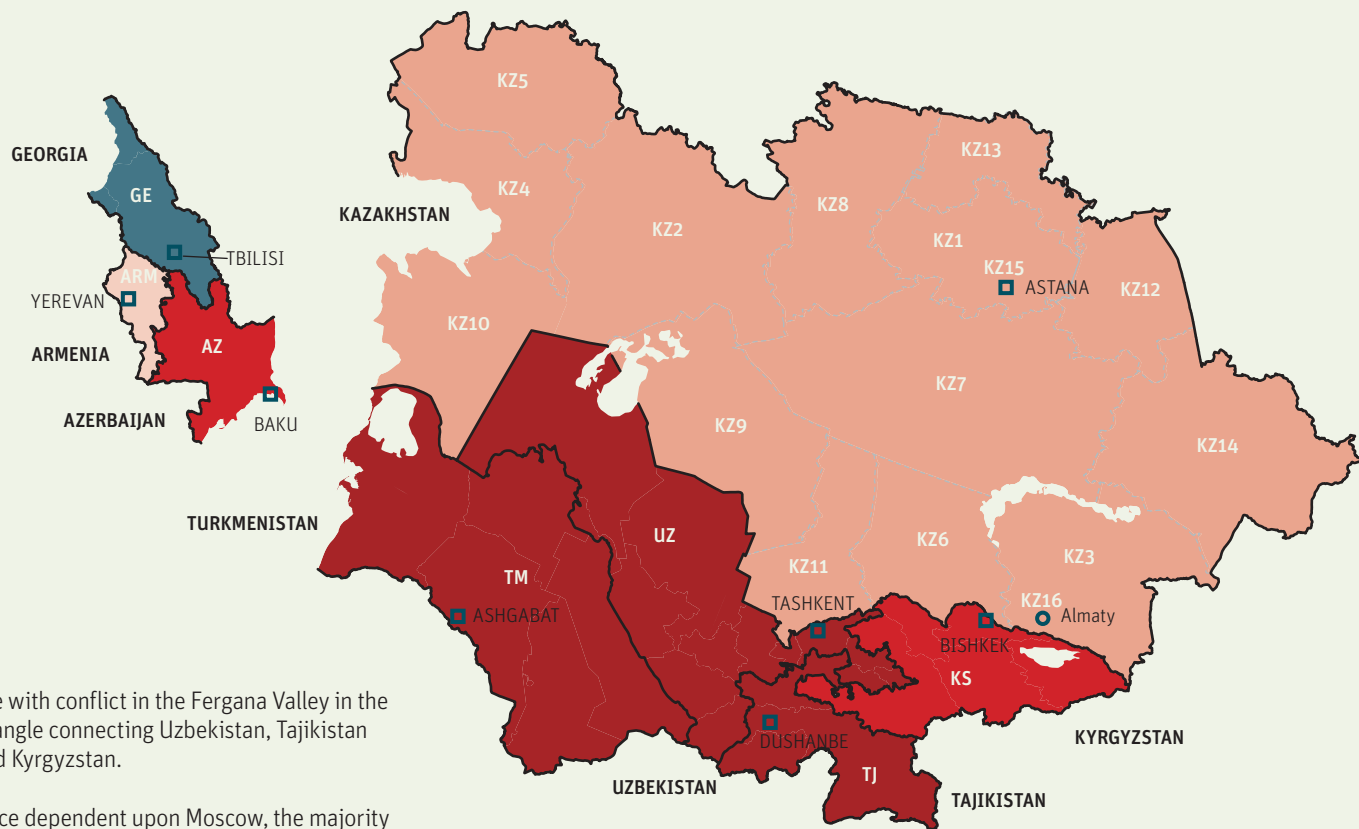
Population change in percentages

1989 (census) until 30 June 2010  
1 July 2010 until 1 July 2031

(Source: author's calculations based on Demoscope Weekly, Vsesoyuznaya Perepis Naseleniya 1989 Goda, Moscow; United Nations, World Population Prospects: The 2008 Revision Population Database, New York)



The South Caucasus and Central Asia have enjoyed little peace since the collapse of the Soviet Union. Armed conflicts have repeatedly blocked the way to economic renewal. Tajikistan, for example, plunged into a five-year civil war in 1992. Azerbaijan and Armenia are still fighting over the Nagorno-Karabakh region and most recently, Georgia and Russia waged war over South Ossetia. Ethnic conflict has always formed the root of these evils. This is the consequence of arbitrary border demarcation during the Soviet era, which observed cultural, linguistic and ethnic distinctions only to a limited extent. The differences are particularly



rife with conflict in the Fergana Valley in the triangle connecting Uzbekistan, Tajikistan and Kyrgyzstan.

Once dependent upon Moscow, the majority of Central Asian countries have had a very difficult time since their independence. The reason for this is, on the one hand, economies almost devoid of diversification – Uzbekistan inherited a cotton monoculture from the Soviet Union – and, on the other hand, regional conflicts over water and natural gas supplies. Young people are emigrating in waves to Russia's construction sites to ensure the survival of their families. In the face of high numbers of children, the population is nonetheless increasing and labour supply is exceeding demand in many places. Only Kazakhstan has been able to halt emigration since its natural resources boom has generated jobs and growth. The region's northernmost and, in terms of land area, largest country has itself become a destination for migrants, particularly from Uzbekistan.

### Substantial growth in Central Asia

People have emigrated in waves from all Central Asian countries and the South Caucasus following the fall of the Soviet Union. High numbers of children have nonetheless ensured steady population growth in many places. Tajikistan, with an average of 3.45 children per woman, can expect the greatest growth in the future. The only country to shrink in the near future will be Georgia.

Population change from 2010 to 2030 in percentages

- 15 to under – 10
- 10 to under – 5
- 5 to under 0
- 0 to under 5
- 5 to under 10
- 10 to under 15
- 15 to under 20
- 20 and above

(Source: United Nations, World Population Prospects: The 2008 Revision Population Database, New York)

# GEORGIA

Population in 2010	4.22 million
Population in 2030 (projection)	3.78 million
Population/km <sup>2</sup> of land in 2010	61
Total fertility rate in 2005-2010	1.58
Life expectancy at birth in 2005-2010	71.6
Annual net migration 2005-2010	– 50,000
Median age in 2010	37.6



(Source: see page 139)

## Fragmented territory

There are several unresolved territorial conflicts on former Soviet territory and Georgia is no exception. On the contrary: there are numerous trouble spots confined to a small geographic area. The most familiar to foreigners is probably the conflict in South Ossetia, a mountainous region in the country's north. War already broke out between Georgians and Ossetians, who had declared independence, in 1991. The region let an international peace force oversee the cease-fire a year later, but this peace is fragile. This last became clear in August 2008, when the Georgian military tried to violently reassert control over South Ossetia. The attempt failed because Russia responded to the aggression by invading Georgian territory within but a few hours. After a few days, the war ended and Georgia was defeated. The conflict, however, remains unresolved. Only Russia, Venezuela, Nicaragua and Nauru have recognized South Ossetia's independence. These are the same countries which recognize Abkhazia, located on the Black Sea coast, as independent. Georgia lost control over Abkhazia, which is significantly larger and has more inhabitants than South Ossetia, at the beginning of the 1990s following another bloody civil war.

The ongoing conflicts have by now made more than 200,000 Georgians refugees in their own country. Following the first war, almost half of them lived in mass camps for more than 15 years.<sup>501</sup> The number of those who have left Georgia since independence in 1991 is even larger than the number of the so-called internally displaced. According to estimates by the United Nations, up to 1.3 million people have left; national sources estimate about one million.<sup>502</sup> In addition to war refugees, primarily ethnic Russians returned in droves to their old homeland in the 1990s. Since then, labour migration northwards and westwards has accounted for most losses.

### Radical liberalization following the Rose Revolution

During the Soviet era, Georgia was considered well-off. It had numerous holiday resorts and it exported tropical fruits, flowers, wine and tea. But the chaos following the demise of the Soviet Union brought the country to a standstill. At the end of 1998, Georgia's GDP was only 36 percent of what it had been in 1990. Industrial production fell to 16 percent of its original

value.<sup>503</sup> Unemployment and hyper-inflation resulted in the impoverishment of over half of the population.<sup>504</sup>

It was only in 2003 that Georgia experienced significantly accelerated economic growth. In the same year, the president and former Soviet foreign minister, Eduard Shevardnadze, had to step down in the wake of the so-called Rose Revolution.\* Supported by the United States, his elected successor, Mikheil Saakashvili, quickly implemented reforms to liberalize Georgia's economy and fight corruption. He abolished a total of 16 of the 22 different taxes, introduced a flat-rate income tax and acquired substantial foreign financial aid. While annual foreign investment in 2002 was still about 160 million US dollars, it increased by 2007 to about 1.8 billion.<sup>505</sup>

\* Shevardnadze was in office since 1995, after the country's first president and radical nationalist, Sviad Gamskhurdia, had been toppled in a putsch and subsequently led the country into civil war.

Investors particularly liked the transport, telecommunications and industrial sectors. The last is concentrated in the region surrounding the capital, Tbilisi, where primarily fertilizer and metal commodities are produced for export to Ukraine, Bulgaria and even the USA and Canada. There is also a strong vinicultural tradition, although it has lost an important market – at least temporarily – since Russia put an embargo on Georgian and Moldovan wine in 2006. Georgia is also one of the world's major producers of hazelnuts, the country's main export commodity to the EU.

At the same time, however, many people are dependent upon subsistence farming and long-term unemployment remains a serious problem. In addition, only a few people have access to the country's expensive health care system.<sup>506</sup> The economic crisis of 2008 and 2009 exacerbated the situation. This is also due to the fact that employment opportunities abroad have shrunk and remittances by migrants have significantly declined. Then there was the war in South Ossetia, which cost a great deal of foreign investors' trust. Between 2007 and 2009, foreign investment plummeted by 56 percent to 769 million US dollars.<sup>507</sup> At least the extensive international reconstruction aid of about 5.3 billion dollars served as something of a counterweight to the recession.<sup>508</sup>

Despite Georgia's westward orientation, which has already led to a strategic partnership with NATO and withdrawal from the Commonwealth of Independent States, it has relations with its unloved neighbour, Russia. For example, the countries have an agreement on the mutual exchange of energy. In autumn and winter, when water levels in Georgian dams are too low, Georgia gets its energy from Russia. In spring and summer, the country returns the amount used in

winter to the Russian power supply system. In the mid-term, Georgia wants to extensively supply electricity to other neighbouring countries. To do so, it is comprehensively overhauling the massive Inguri hydropower plant on the border to Abkhazia and it has instigated numerous new hydroelectric power projects.

### More births than deaths, but not for long

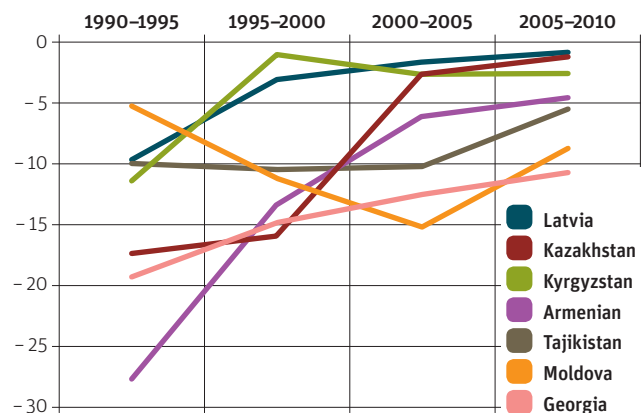
At the beginning of 2010, official estimates put Georgia's population at 4.4 million. Abkhazia and South Ossetia, which together have about 300,000 inhabitants, are not included in these estimates. Compared to 1991, the population of the former Georgian Soviet Socialist Republic has decreased by about 700,000 people. This can only be explained by emigration, since in Georgia – in contrast to Russia or Ukraine, for example – slightly more people are born than die annually. Since independence, however, the

average number of children per woman has fallen significantly below the level of 2.1 required for stable population development. Current birth surpluses can be accounted for by the fact that the 15 to 29-year-old age group is the country's largest. It is only in five to ten years, when the smaller generation of the 1990s begins to start families, that there will be fewer offspring.<sup>509</sup> By 2030, the population could decrease to 3.8 million people.<sup>510</sup> As in other countries in the region, such as Armenia, Azerbaijan or Ukraine, extensively fluctuating migration has nonetheless made it difficult to calculate reliable population numbers.

The comparatively high life expectancy will hardly compensate for future shrinkage. Men live an average of 69 years, more than seven years longer than their counterparts in Russia.<sup>511</sup> One reason for this difference is the Black Sea's mild climate. Another is the moderate consumption of alcohol, which is not even half as much in the wine-country of Georgia as it is in Russia.<sup>512</sup> This more than compensates for the higher infant mortality and the expensive health system.

### Emigration country Georgia

According to estimates by the United Nations, Georgia loses more than one percent of its population annually due to emigration. In contrast to other former Soviet countries, emigration rates since 1990 have barely declined. Due to labour migration, which frequently remains unregistered, actual migration rates in Central Asian countries as in the South Caucasus and Moldova are probably higher than official statistics suggest.



Annual net migration per 1,000 inhabitants in several Soviet successor states, 1990 to 2010  
(Source: United Nations, World Population Prospects: The 2008 Revision Population Database, New York)

# ARMENIA

Population in 2010	3.09 million
Population in 2030 (projection)	3.17 million
Population/km <sup>2</sup> of land in 2010	104
Total fertility rate in 2005-2010	1.74
Life expectancy at birth in 2005-2010	73.7
Annual net migration 2005-2010	- 15,000
Median age in 2010	32.0



(Source: see page 139)

## Conflict with neighbours hampers development

Holy Mount Ararat, upon which Noah's Ark is said to have come to rest, adorns the Armenian national coat of arms. The national symbol can also be found on the Armenian 50-dram bill. Yet the 5,137 metre volcano rising majestically from the East Anatolian region is not actually situated in Armenia. It is located in Turkey and remains a bone of contention between the neighbours. Even during the Soviet era, the Turkish government protested claims to the Ararat by the Armenian Soviet Socialist Republic, inspiring former foreign secretary Andrey Gromyko, with all the arrogance of a world power, to point out that the moon in Turkey's coat of arms did not, after all, belong to Turkey.

Relations between Armenia and Turkey have been tense for more than a century. In "Armenistan", once a province of the Ottoman Empire, Armenians strove for independence, for which they were mercilessly persecuted. Between 1915 and 1923, 1.5 million Armenians were killed in massacres and death marches, an act of

genocide which Turkey officially contests to this day.<sup>513</sup> Since Armenia gained autonomy following the fall of the Soviet Union, the country has not had diplomatic relations to its Turkish neighbour. Borders are closed on both sides. It was only in summer 2009 that diplomats from both countries hinted that they wanted to normalize relations.

While there have been signs of improvement in Armenian-Turkish relations, relations to Azerbaijan, Armenia's neighbour to the east, remain sour. This is due to the conflict over Nagorno-Karabakh, a frontier area of both countries with a primarily Armenian population and internationally recognized as part of Azerbaijan. Its approximately 150,000 inhabitants declared the territory an independent republic in 1992. In a bloody battle with Azerbaijan and with the aid of the Armenians, they were able by 1994 both to secure a large part of the territory of the formerly autonomous republic and to create an additional buffer zone. Overall, the government in Stepanakert occupies about 16 percent of the Azerbaijani territory.<sup>514</sup> Armenia does not, in fact, lay claim to

Nagorno-Karabakh, but without the massive presence of the Armenian military, the republic would have long ceased to exist.

Armenia cannot afford a conflict with Georgia, its comparatively large neighbour to the north, even though there are a few areas in Georgia's southern regions primarily inhabited by Armenians. Georgia is a key trade route to the rest of the world since all transport to the Russian Federation, Armenia's most important trade partner, traverses Georgia due to the conflict with Azerbaijan. Moreover, almost all exports need to be executed through Georgian Black Sea ports due to the closed border to Turkey.

# Shaky economic development

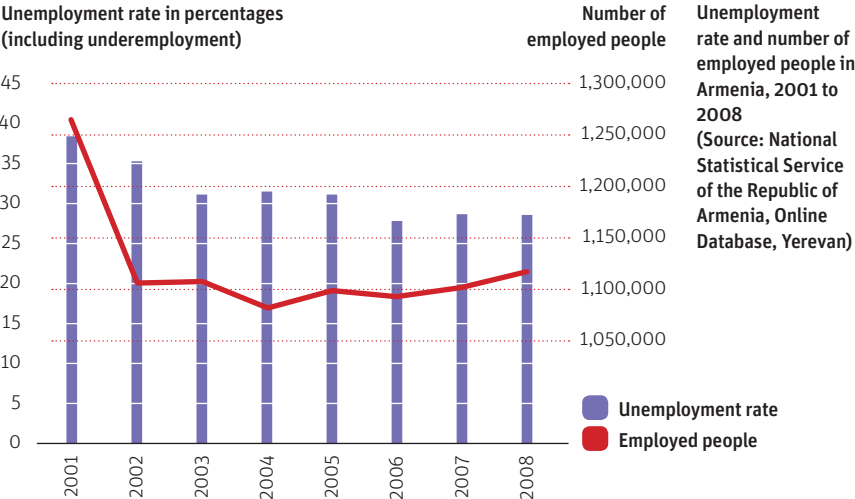
Armenia is the smallest republic in the South Caucasus. With a surface area of just 30,000 square kilometres, it is somewhat smaller than Belgium. Almost 90 percent of the Armenian territory in this distinctive mountain region between Georgia, Azerbaijan, Iran and Turkey lies more than 1,000 metres above sea-level. It reaches its peak at 4,000 metres with the Aragaz Volcano. In the middle of the country, at 2,000 metres, lies one of the world's largest mountain lakes, Lake Sevan. Due to the massive exploitation of water to irrigate fields, the lake's water level sank during the Soviet era by about 20 metres. It was only in the 1980s that use of the water was prohibited to allow replenishment.<sup>515</sup> For Armenia, this was a question of survival, since Lake Sevan is considered one of the country's most important sources of drinking water.

Armenia, like all other Soviet successor states, suffered its economic demise after the Soviet Union crumbled. The country's economic decline, however, began earlier: namely, in 1988, when not only 25,000 people but about 40 percent of industrial plants fell victim to a disastrous earthquake. The north of Armenia was particularly hard-hit. The quake completely levelled the city of Spitak, home to 20,000 inhabitants.

Recently, Armenia's economy has been based primarily on construction. Service sectors such as telecommunications and tourism have also seen rapid growth in the past few years. But even if the Armenian economy registered two-digit growth rates, GDP only managed in 2004 to reach the level of 1990. Manufacturing, which once dominated the economy, now constitutes but nine percent of total economic activity.<sup>516</sup>

# Emigration to escape unemployment

Unemployment in Armenia, at almost 30 percent, is extremely high. Nonetheless, it has sunk since the beginning of the decade. This is also true, however, for the number of employed people. This development, which seems illogical at first glance, can be explained by the emigration of Armenian workers, who can expect wages three times higher in the Russian Federation than in their homeland.



The worldwide financial and economic crisis did not spare Armenia. Exports sank from 1.2 billion US dollars in 2007 to about 700 million US dollars in 2009.<sup>517</sup> It was only in the first quarter of 2010 that the country enjoyed export growth in comparison to the previous year. The natural resources industry, in particular, suffered from the enormous decline in prices on the world market. After prices for copper and molybdenum intermittently dropped by two-thirds, numerous mines had to be closed temporarily.

Another consequence of the crisis was the sharp decline in remittances by Armenian labour migrants, who have constituted a significant economic factor since 2000. According to the last Russian census in 2002, about 1.1 million Armenians lived in Russia alone.<sup>518</sup> Since then, there are probably significantly more due to the large numbers of labour migrants in the last few years. There was an overall decline in remittances of about 32 percent in 2009 following steady

increases in the previous years.<sup>519</sup> This is a grave loss for Armenia, where, according to the International Labour Organization, up to 30 percent of the working-age population are unemployed or underemployed.<sup>520</sup>

Even though almost a quarter of all employed people in Armenia work in agriculture, the country still needs to import food.<sup>521</sup> In the mountainous terrain, with its cold winters and dry summers, only a few stretches of land are suitable for cultivation and these can only be worked using the most primitive of means. In order to modernize agriculture and to create better access to world markets for Armenian commodities, a North-South railway and motorway are supposed to be built in the next few years with the financial aid of the Asian Development Bank. The railway and motorway are supposed to connect the country to Iran and to shorten the way to the Georgian port of Batumi by 250 kilometres.



Relatively stable demographics

About 3.2 million people lived in Armenia in 2009 according to official statistics. Armenia is the only Soviet successor republic in which the population, which is 98 percent Armenian, is almost ethnically homogenous.<sup>522</sup> But in contrast to the other former Soviet republics, which, following the fall of the Soviet Union, became more ethnically homogenous due to migration, ethnic unity is traditional in Armenia. Even the last Soviet census in 1989 counted 93 percent Armenians in the Armenian Soviet Socialist Republic.<sup>523</sup>

Since 1989, Armenia’s population has only decreased minimally from the 3.3 million people it then had. Since 2002, it has even increased slightly.<sup>524</sup> While Armenia has experienced losses due to emigration since independence, these are easily compensated for by the country’s birth surplus.<sup>525</sup> Armenia has long been a typical emigration country; two-thirds of all people with Armenian roots live in a global diaspora, including countless celebrities such as Charles Aznavour, the investor and multi-billionaire Kirk Kerkorian and Cher.

The average number of children per woman is 1.74. This lies below the figure of 2.1 which would be necessary to keep the population stable long-term, but it is still sufficient to prevent demographic shrinkage since Armenia’s population is very young and there

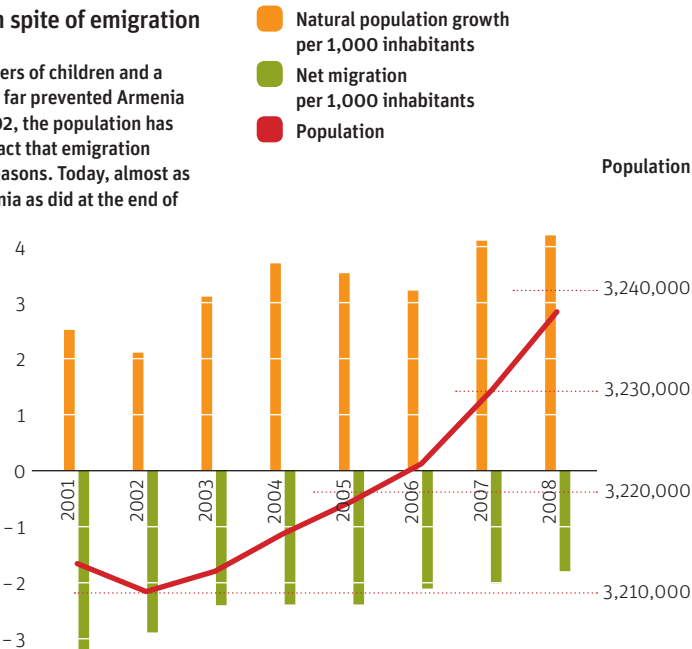
is, accordingly, a substantial pool of parents-to-be. The population under 20 years old is currently twice the size of the over-59s.<sup>526</sup>

At 70.2 years for men and 76.6 years for women, life expectancy at birth in Armenia is significantly higher than in Russia.<sup>527</sup> Armenians drink less alcohol and the prevalence of HIV, at 0.1 percent among the adult population, is very low.<sup>528</sup> The high infant mortality rate, which the United Nations estimate at 25 deaths per 1,000 births, nonetheless shows, when compared to Russia’s (twelve in every 1,000), that Armenia’s health system has a lot of catching up to do.<sup>529</sup>

Population growth in spite of emigration

Comparatively high numbers of children and a young population have so far prevented Armenia from shrinking. Since 2002, the population has even grown, despite the fact that emigration continues for economic reasons. Today, almost as many people live in Armenia as did at the end of the Soviet era.

Natural population growth, net migration and population size in Armenia  
(Source: National Statistical Service of the Republic of Armenia, Statistical Yearbook of Armenia, 2005, 2009, Yerevan)



# AZERBAIJAN

Population in 2010	8.93 million
Population in 2030 (projection)	10.32 million
Population/km <sup>2</sup> of land in 2010	103
Total fertility rate in 2005-2010	2.16
Life expectancy at birth in 2005-2010	70.2
Annual net migration 2005-2010	– 10,000
Median age in 2010	28.4



(Source: see page 139)

## Oil and arms build-up

In 1921, Josef Stalin assigned Nagorno-Karabakh, inhabited primarily by Armenians, to what is today Azerbaijan, laying the groundwork for one of the many ethnic conflicts in the Caucasus. The conflict escalated in 1988 when the territory's Armenian population once again demanded Nagorno-Karabakh's annexation to Armenia.

What began with violent attacks by both sides developed over a very short span of time into veritable pogroms against Armenians in Azerbaijan and ultimately into a war between both countries. Up to 50,000 people lost their lives in the following six years and about a million were displaced, primarily Azerbaijanis living in Armenia and Nagorno-Karabakh.<sup>530</sup> The Azerbaijanis lost control of over 16 percent of their territory following the cease-fire negotiated by Russia in 1994. These events, and the masses of refugees in Azerbaijan, created a national trauma which continues to resonate in today's political and social landscape.

While negotiations over the final territorial status of Nagorno-Karabakh continue, arms build-up still has top political priority. Since 1999, Azerbaijan has had the largest military budget of all countries in the South Caucasus. In 2008, the 1.43 billion US dollar budget was three times as high as Armenia's.<sup>531</sup> In terms of numbers, Azerbaijan's army, with 66,500 active soldiers, is the region's strongest.<sup>532</sup> This alleged position of strength has repeatedly led the Azerbaijani president, Ilham Aliyev, to speculate publicly about a military solution to the conflict.

Dependent upon natural energy resources, Azerbaijan lies east of Armenia and has an 800 kilometre coastline to the Caspian Sea, over whose international status neighbouring countries still argue. This is because its status is connected to mining rights for the wealth of mineral resources below the sea's floor. The centre of crude oil production is the capital of Baku on the Absheron Peninsula stretching 60 kilometres into the sea. The industrial exploitation of oil sources began as early as 1870, at which time Baku attracted soldiers of fortune from all over the world – to which the city's architecture still attests. Alfred Nobel's brothers tried their luck here as did the Rothschild family.

Compared to today, the earlier oil-frenzy was vanishingly small. Between 2000 and 2008 alone, Azerbaijani GDP multiplied eight times over before it declined slightly in 2009.<sup>533</sup> In 2008, Azerbaijan exported goods worth 66 percent of GDP. 93 percent of these exports consisted of crude oil and natural gas.<sup>534</sup> In total, Azerbaijan produced over 50 million tonnes of oil, about a tenth of Russia's, the world market leader.<sup>535</sup>

Some of the revenues from the oil business are administered by Sofaz, the state oil fund, which was worth 14.9 billion US dollars at the beginning of 2010.<sup>536</sup> First and foremost, Sofaz supports the state budget and finances infrastructure projects and social programmes. And yet, many people in Azerbaijan still live in poverty. The poverty rate did, indeed, sink from 68 percent in 1995 to eleven percent in 2009, but in the same year, 38 percent of all employed people worked in the agrarian sector, which often means underemployment and poverty.<sup>537</sup> This also corresponds to the fact that in Azerbaijan, particularly in rural

areas, significantly more children die before their first birthday than in the economically weaker neighbouring countries of Armenia and Georgia.<sup>538</sup> It is precisely the young who flee a difficult life by turning to the supposed paradise of drug consumption. An estimated 300,000 people, or about five percent of the adult population in Azerbaijan are injecting drug users, the world's highest rate.<sup>539</sup>

The economic crisis of 2009 further exacerbated the situation, since many of the approximately three million Azerbaijani labour migrants in Russia lost their jobs and returned to their home country.<sup>540</sup> This meant that remittances, which constituted the financial backbone of many Azerbaijani families, fell from 1.6 to 1.3 billion US dollars.<sup>541</sup> The country faces more risks with its overflowing oil revenues. As a result of the enormous foreign trade surplus, the value of the national currency, the New Azerbaijani Manat, has appreciated by 16 percent compared to the US dollar since it was introduced in January 2006.<sup>542</sup> The country's other export commodities have

become expensive on the world market as a result. Inflation has also played a role in this. Due to the increase in the world's food prices and high national expenditures – particularly for the defence industry – the inflation rate was about 20 percent before the economic crisis.<sup>543</sup>

### Population growth and selective abortion

In 2009, about 8.9 million people lived in Azerbaijan, of which about 600,000 lived in the breakaway republic of Nagorno-Karabakh. This was 1.6 million more than following independence in 1991. The growth was caused by the comparatively high number of a few more than two children per woman as well as the population's young age structure. About 100,000 people more are born than die annually, compensating for the labour migration loss of about 10,000 people per year.<sup>544</sup> With a young and quickly-growing population, the largely Islamic Azerbaijan more closely resembles Central Asian countries than its neighbours in the South Caucasus region. As in Central Asia, many young people in Azerbaijan cannot find work, meaning that emigration to Russia could increase in the future.

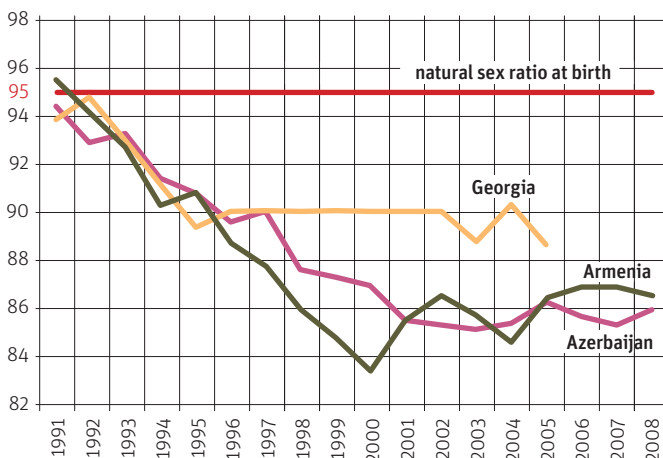
Another problem is common to all three Southern Caucasian countries: the selective abortion of female fetuses. In Azerbaijan's patriarchal society, male progeny are more highly valued than female. Repressed during the Soviet era, the preference has since become more firmly established. In 2009, there were only 87 girls between zero and four for every 100<sup>th</sup> boy; the natural male-female ratio is 100 to 95.<sup>545</sup> In particular, women who already have one or two girls tend to abort further female fetuses.<sup>546</sup> Selective abortion has been made possible by access for ever more people to prenatal diagnostics.

Greater education could counter the antipathy towards female children. But societal norms cannot be altered from one day to the next. In the meantime, more and more people have been expressing a desire to prohibit pre-natal sex determination, for if the current trend continues, 15 percent of all young men may be looking for a partner in vain in 20 years time, a fact that is anything but helpful to the country's stability.

### Increasing dearth of women

Once the Soviet Union fell, the traditional preference for male children prevailed in all three countries of the South Caucasus. Since it became possible for more and more people to determine the sex of their child before birth, the selective abortion of female fetuses has become widespread. Today, 15 percent fewer girls are born in Azerbaijan and Armenia than boys. Five percent is normal.

Number of girls born per 100 boys



Number of female babies per 100 male babies in the South Caucasus, 1991 to 2008  
(Source: World Health Organization, European Health For All Database, Geneva)

# KAZAKHSTAN

Population in 2010	15.75 million
Population in 2030 (projection)	17.24 million
Population/km <sup>2</sup> of land in 2010	6
Total fertility rate in 2005-2010	2.31
Life expectancy at birth in 2005-2010	64.9
Annual net migration 2005-2010	– 20,000
Median age in 2010	29.4



(Source: see page 139)

## Central Asia's natural resources giant

On December 16th, 1991, which is now a national holiday, the Kazakhs, who had been dominated for more than 200 years by Russians and Soviets, founded a politically sovereign republic. On the very same day 14 years later, the Atasu-Alashankou pipeline was festively opened. This pipeline connects the oil-rich Kazakh region on the Caspian Sea to the Chinese Xinjiang and is intended to make the country economically less dependent upon Russia, its northern neighbour. The approximately 2,000 kilometre oil pipeline is supposed to supply China with 20 million tonnes of crude oil annually, which would correspond to about 15 percent of Chinese oil imports.<sup>547</sup>

Drilling for oil began in Kazakhstan as early as 1899, but it has only been since independence that the country has developed into a significant worldwide exporter of fossil fuels. After 1995, the amount of oil produced grew within a mere 14 years from 20 to 78 million tonnes, which accounted for two percent of the world's production in 2009. Kazakhstan's natural gas industry multiplied its production six-fold during the same period, constituting one percent of the world's production in 2009.<sup>548</sup>

An estimated 5.3 billion tonnes of oil, or about three percent of the world's reserves, can be found in Kazakhstan.<sup>549</sup> The Kashagan Field in the North Caspian Sea, discovered in 2000, is among the world's last great finds. This and the enormous natural gas, coal and uranium reserves have made the Central Asian country one of the most important owners of non-renewable energy. Furthermore, the barren Kazakh earth contains chromium, vanadium and bismuth as well as iron, copper, lead and zinc.

90 percent of all of Kazakhstan's exports originate in natural resources and products generated in the first phase of processing. Increasing prices for natural resources have blessed the republic with enormous economic growth and increasing wealth since 2001. Kazakh GDP per capita rose from 5,600 international dollars to 11,400 in 2008.<sup>550</sup> Average wages and salaries grew two-and-half times between 2004 and 2008 alone to a monthly 503 US dollars.<sup>551</sup> Yet Kazakhstan was not spared by the economic and financial crisis. Whereas its economy had grown on average by nine to ten percent in the three years prior to the crisis, it grew by only two percent in 2009 due to the crisis in the finance and housing sectors.<sup>552</sup>

## A minority in their own country

Kazakhstan, which is the earth's ninth-largest country in terms of surface area, stretches over 3,000 kilometres from the Caspian Depression in the west to the Altai Mountains in the east. From the Kazakh arm at the mouth of the Volga to the Caspian Sea, the surface of which lies 28 metres below sea level, the country stretches hundreds of kilometres of primarily plains and steppe, rising into mountain ranges only at the outermost east and south-east on the borders to Mongolia, China and Kyrgyzstan.

From time immemorial, the sparsely-populated Kazakhstan has been a transit region for trade caravans and the goal of campaigns of conquest. Constant attacks by West Mongolian Oirats in the 18<sup>th</sup> century did not leave the Kazakh hordes, at enmity with one another, any other choice but to seek Russia's protection and to declare their territory a protectorate of the Czarist Empire.<sup>553</sup> Following the Russian agrarian reforms of 1905, which ensured greater freedom of movement to farmers who had previously been bound to their village communities, Kazakhstan and Siberia, the South Caucasus and the Far East became migration destinations for the Russian rural population. Even before the Bolsheviks seized power in 1917, the Slavic population constituted 30 percent of the total population.<sup>554</sup>

Countless deaths during the civil war between 1917 and 1921 and during forced collectivization as well as emigration to China and Mongolia due to famines resulted in a decline in the number of Kazakhs. In addition, the deportations of the 1930s brought many other ethnic groups to

## One country, two capitals, many names

The opening up of Central Asia by the Russian Empire went hand-in-hand with several regional outposts intended to secure the territory. Today's Almaty quickly developed into the capital of the Zhetysay region and was home to 40,000 people on the eve of the First World War. Astana, which was founded 30 years earlier, long served, in contrast, as a simple fort, becoming a significant traffic hub only after the Turksib railway line was built.

In 1921, the Bolsheviks moved the capital of the Kazakh Autonomous Soviet Socialist Republic to today's Almaty, at the same time changing its name from Verny to Alma-Ata, which essentially means "Father of Apples". Today's capital, Astana, has also been repeatedly renamed. Until 1961, it was called Akmolinsk and under Nikita Khrushchev it was called Tselinograd. It became Akmol (White Grave) upon independence in 1991 while Alma-Ata became Almaty (City of Apples).

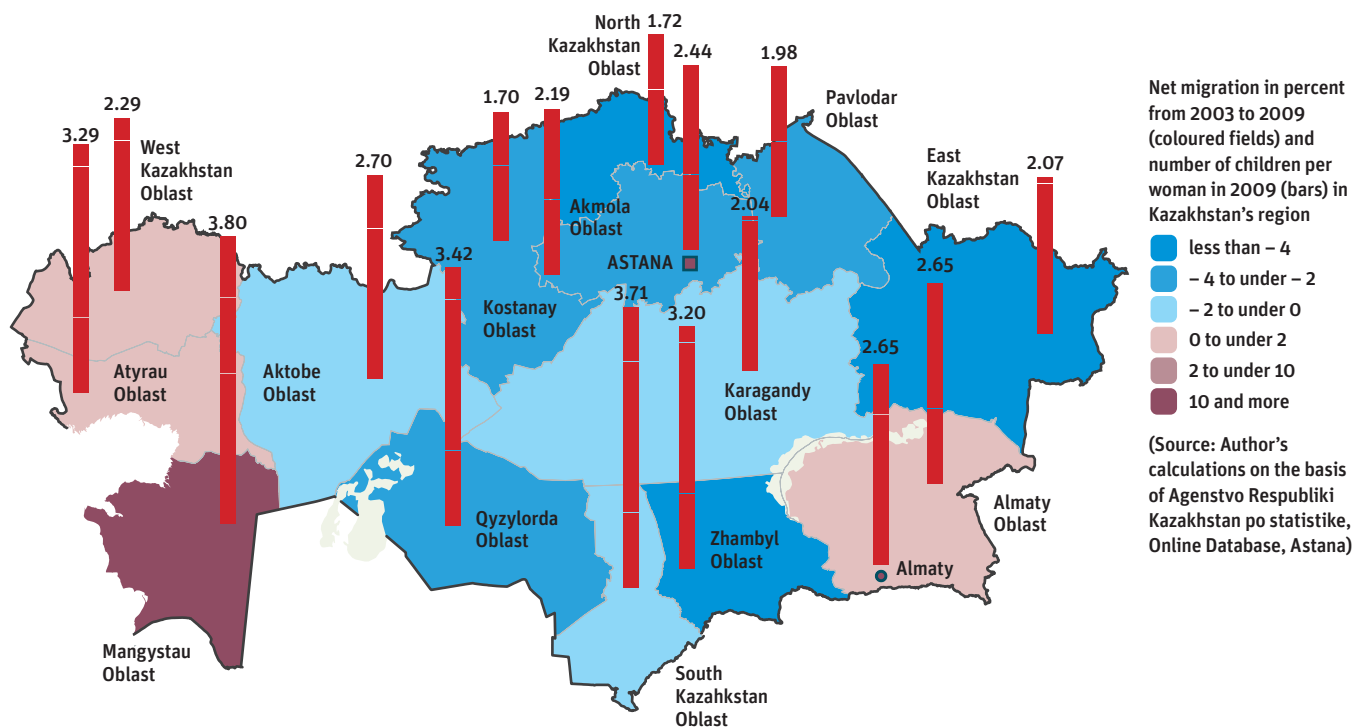
In 1994, the Kazakh government decided to move the capital of Almaty to Akmol and to now call it Astana (Capital). Officially, the danger posed to Almaty by earthquakes and mud avalanches were given as the reasons for the move. Many, however, believe the real reasons have to do with Kazakhstan's clan structures. President Nazarbayev comes from the so-called middle jüz (horde). His conflicts with the influential Almaty clans, who belong to the upper jüz, have presumably played a role in the move. At the same time, the Kazakh leadership wanted to counter separatist tendencies in Russian-speaking areas in the country's north-east, where the capital is located. But the geo-strategically inconvenient position of the old capital, not far from the Chinese border, also played a role.

Since Astana became the capital, people have been pouring into the booming centre on the Ishim River. Since 1989, the number of inhabitants has risen from 276,000 to 640,000. The number of inhabitants in Almaty also grew in comparison to 1989 by 21 percent to 1.37 million people.<sup>557</sup> The Kazakh Central Bank, 36 foreign embassies and consulates as well as representatives from UN and Unesco have remained loyal to Almaty and the city itself has been able to stake its claim as the country's centre of science, culture and finance.

Kazakhstan. The population count of 1959, which recorded 30 percent Kazakhs, marked the absolute nadir of this development. In the following decades, it was the high number of children by Kazakh women which contributed to the growth of the Kazakh population. In 1989, Kazakhs constituted 40 percent of the country's total of 16.5 million people. The 1999 census revealed that, at 53.5 percent, they once again constituted the majority ethnic group.<sup>555</sup> One reason for this was the emigration of the Russian population. While

today's Kazakhstan enjoyed positive net migration within the Soviet Union until 1970, it lost a total of approximately 1.2 million people to emigration between 1971 and 1991.<sup>556</sup>

Emigration from Kazakhstan initially intensified following independence. Between 1990 and 1999, the country had a net loss of more than 1.9 million people, about twelve



percent of its entire population, particularly Slavs, Germans, Tatars, Greeks and Jews.<sup>558</sup> In turn, many Kazakhs, the so-called Oralman (returnees), immigrated from Mongolia, China and Iran, attracted by the government's repatriation programme. Most recently, Kazakhstan has become a magnet for labour migrants from the Central Asian republics due to its rapid economic development. Since 2003, the emigration country has become an immigration country. In that same year, the population grew for the first time since independence.<sup>559</sup> In the mid-term, Kazakhstan could even compete with Russia for labour migrants. Immigrants head for the former and the new capitals, Almaty and Astana, as well as the oil and gas-producing regions of Atyrau and Mangystau. All other regions of the country lose population due to migration.

Differing fertility rates among the various ethnic groups can still be observed today. While the Central Asian ethnic groups, such as the Kazakhs, Uzbeks or Uyghurs, have enjoyed remarkable natural population growth in the last ten years, the Russian and Ukrainian populations have shrunk due to mortality surpluses. In the northern regions of the country, inhabited primarily by Slavs, the number of children per woman in 2008 was generally just under two. In contrast, women in the south, which is primarily inhabited by Central Asians, have an average of more than three children.<sup>560</sup>

There were about 960,000 ethnic Germans in the Kazakh Soviet Socialist Republic when the last Soviet census was taken in 1989.<sup>561</sup> These concentrated, with a few exceptions, in the rural north and were primarily comprised of Volga Germans deported by Stalin and their offspring. After the fall of the Soviet Union, there was a massive wave of emigration. The most recent census of 2009 recorded but 180,000 Germans.<sup>562</sup>

### Immigration poles and lots of children

The northern and eastern areas of Kazakhstan, which are still mostly inhabited by a Slavic population, have experienced emigration since independence. One exception is the new capital of Astana, which has gained one-fourth of its population of 2003 due solely to immigration. The oil-producing regions in the country's west as well as the former capital of Almaty and its surroundings are the clear migration winners. It is particularly the rural areas of the south which have suffered from internal migration, but the number of children per woman is so high in these areas that the negative net migration has been more than compensated for.



## Baikonur: window to the cosmos

The first Sputnik, the dog Laika, who was the first animal “cosmonaut”, and Yuri Gagarin, the first human being in space: they all launched into the cosmos from the Baikonur space station. This was the most important launching pad for Soviet military and civilian space exploration. The massive cosmodrome had a surface area almost as large as the Republic of Moldova, although it did not appear on maps during the Soviet era.

The once hermetically-sealed city of Leninsk (today’s Baikonur) was home, at the peak of the Cold War, to about 100,000 employees and their families. Today, about 40,000 people still live in Baikonur.<sup>564</sup> The military has largely pulled out and released the premises for civilian purposes. Currently, it is the most important launching point for satellites and the provision of the ISS. In 2009, 27 rockets launched from Baikonur.<sup>565</sup>

Located in the middle of the semi-desert of Kazakhstan, the grounds are, for all intents and purposes, extra-territorial, for Russia has leased the area from Kazakhstan until 2050 for an annual 115 million US dollars. The Proton and Soyuz rockets are produced in Moscow and Samara and need to be transported 1,500 and 2,500 kilometres over land respectively before they can transport their freight into space. The future of these grounds, extensively covered by rocket debris and partially polluted with fuel waste, remains uncertain. From 2011 on, Russia wants to build its own cosmodrome in the far eastern Ulgorsk. In 2018, the first cosmonauts should launch there. Among other things, Russia wants to address demographic problems in the region using this construction, for the new cosmodrome is supposed to ensure the livelihoods of about 120,000 people in a region affected by emigration.<sup>566</sup>

A peculiarity of the German minority is its natural growth: in 1999, births exceeded deaths by 3.5 children per 1,000 inhabitants; by 2008, the surplus had grown to 9.9 children.<sup>563</sup> There are presumably two reasons for this unusual development: first, most Germans in Kazakhstan live in rural areas in which higher numbers of children are normal. Secondly, entire families, meaning many older people, left the country in the wave of emigration.

According to United Nations projections, about 17.2 million people will live in Kazakhstan in 2030.<sup>567</sup> The number of Central Asian ethnic groups among the entire population will then be significantly higher than today. Due to its mineral resources as well as to its beneficial age structure and its population’s high level of education, Kazakhstan is ideally suited to become Central Asia’s economic engine. The “Strategic Development Plan through 2020” is supposed to promote this development. It aims to improve the country’s business climate, to diversify the economy as quickly as possible and to invest more in health and education. In addition, the plan aims to improve the social situation of the population, promote understanding among the various ethnic groups and stabilize international relations.<sup>568</sup>

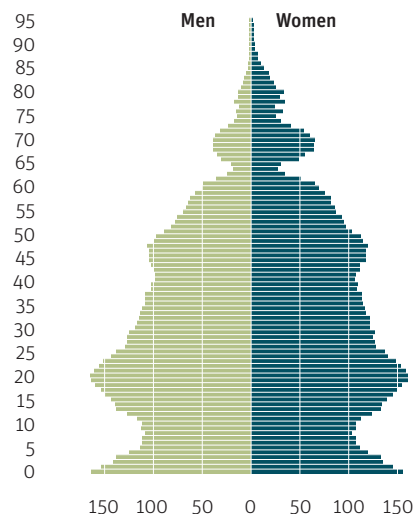
## The Cold War’s dangerous legacy

Within the Soviet Union, Kazakhstan already provided natural resources and raw materials. Since fulfilling national plans was a priority, environmental concerns were essentially completely neglected.

In the cities of Almaty, Shymkent, Oskemen, Aktobe, Temirtau, Karaganda and Taraz, in which more than a fifth of all Kazakh inhabitants live, the air is extremely polluted

## Young and growing Kazakhstan

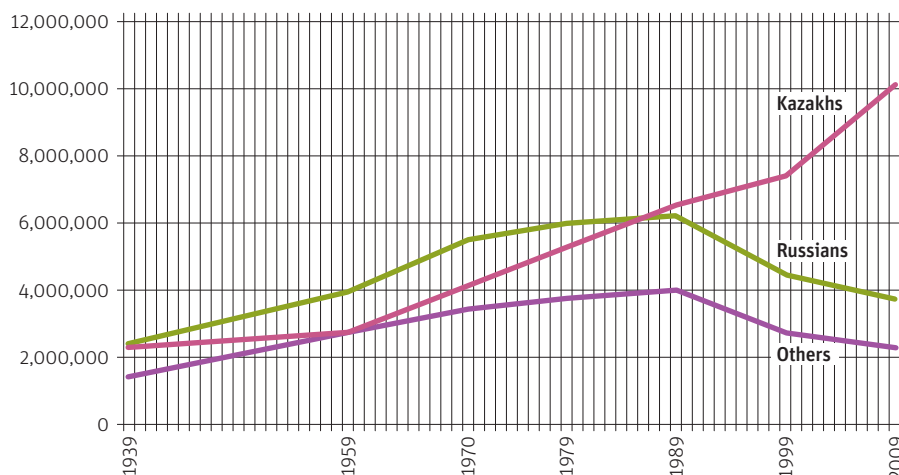
After women in Kazakhstan had an average of 3.16 children in 1987, the total fertility rate sank in the 1990s to 1.76 children.<sup>569</sup> Today’s five to 19-year-olds have thinned out accordingly. In the meantime, Kazakh women have started having significantly more children. The reasons for this are the economic upswing as well as the return to their homeland of Oralman, who have a lot of children, from rural areas in Mongolia and China. The age structure also makes losses in the Second World War very clear.



Population of Kazakhstan by age in thousands in 2008 (Source: Aгенство Республики Казахстан по статистике, Демографический ежегодник Казахстана 2009, Astana)

### Kazakhstan's population by ethnicity between 1939 and 2009

(Source: Demoscope Weekly, Perepisi Naseleniya Rossiyskoy Imperii, SSSR, 15 novykh nesawisimyykh gosudarstv, Moscow; Aгенство Respubliki Kazakhstan po statistike, Ob itogakh perepisi naseleniya 2009 goda, Astana)



according to information by the Ministry of Environment Protection.<sup>570</sup> About two-thirds of arable land is contaminated, particularly in the industrial centres and the densely populated southern agricultural areas.<sup>571</sup> In 2009, the environmental ministry could not designate a single river or lake as clean and deemed 40 of 56 bodies of water polluted or extremely polluted.<sup>572</sup> Drinking water in Kazakhstan is usually taken from surface or groundwater, which is very low in the summer and in which, accordingly, contaminants collect. For this reason, among others, the life expectancy of the primarily Muslim population, which is 61.9 years for men and 72.4 years for women, is significantly lower than in western industrial countries.<sup>573</sup>

On 29 August, 1949, the Soviet Union tested its first atom bomb, on the atomic testing grounds of Semipalatinsk in North Kazakhstan. In total, about 460 above and

underground atomic tests were conducted in the Kazakh steppe up through 1989. The nuclear explosions have contaminated about 19,000 square kilometres, covering a territory almost as large as Slovenia.<sup>574</sup>


“Rebirth Island”, which was once located in the middle of the Aral Sea but is now a peninsula due to the drying out of the lake and is divided by the Kazakh-Uzbek border, has turned into a ticking time-bomb. From 1954 to 1992, the island was used to test biological weapons. Among other things, open-air experiments with anthrax, pox and plague pathogens were conducted on animals. After the fall of the Soviet Union, the military left, destroying its plants, and promised to decontaminate the island. Whether this has been sufficiently executed remains unclear. The newly-erected land bridge has created new fears that reptiles and rodents could carry fatal pathogens inland. One indication of this is recurring outbreaks of the plague among rodents in the region. The last cases of plague among humans were registered in 2003, after three Kazakh farmers had eaten camel meat.

### Kazakhs gaining ground

Since the demise of the Soviet Union, Russians and other non-Central Asian ethnic groups, particularly Ukrainians and Germans, have been leaving Kazakhstan. This is one reason why the number of Kazakhs has grown. Moreover, Kazakh women have more children than non-Asian population groups. In 1999, Kazakhs accounted for more than half of the population in their own country for the first time since World War II.

# UZBEKISTAN

Population in 2010	27.79 million
Population in 2030 (projection)	33.93 million
Population/km <sup>2</sup> of land in 2010	62
Total fertility rate in 2005-2010	2.29
Life expectancy at birth in 2005-2010	67.7
Annual net migration 2005-2010	– 80,000
Median age in 2010	24.5



(Source: see page 139)

## Cotton: an environmental risk

Geographically, Uzbekistan is a special case: with the exception of the Principality of Liechtenstein, it is the only country in the world which neither borders the ocean nor has neighbours with direct access to the sea. In Central Asia's most populated state, water is a precious good. 80 percent of the country is desert. The country's two large rivers, the Amu Darya and the Syr Darya, are the only sources of water during drought and they feed the once magnificent Aral Sea at the end of their thousand-kilometre journey through the desert.

Today, the Aral Sea, once earth's fourth largest lake, has shrunk to approximately a quarter of its original size. Large areas have dried up since the 1950s and turned into giant salt flats. Soviet planners are responsible for the gradual disappearance of the lake: they extensively expanded the cotton monoculture established during the Czarist period and dammed up the rivers in the highlands of Tajikistan and Kyrgyzstan in order to irrigate the fields. In the valley, the Uzbeks could use the water to irrigate their cotton fields. In the 1980s, but a tenth of the original amount of water of the Amu Darya and Syr Darya Rivers reached the Aral

Sea. And what arrived was contaminated by pesticides, herbicides and the residua of fertilizers. Since then, not much has changed.<sup>575</sup>

The drying up of the lake, which has since split up into a small northern and a larger southern fragment, adversely affects public health. The wind disperses the desiccated former sea bottom, which has been infused with salt and chemicals, hundreds of kilometres. The region's inhabitants breathe this in as toxic dust, which leads to respiratory illness: in the Karakalpakstan region, which directly borders the Aral Sea, there is a greater rate of pneumonia among children than anywhere else in the world.<sup>576</sup> Throughout the country, similar illnesses count among the most frequent causes of death. Over 60 percent of respiratory illnesses can be attributed to environmental problems.<sup>577</sup>

The economy also suffers from the degradation of the environment. The approximately 60,000 employees of the fishing industry surrounding the Aral Sea lost their livelihoods as early as the 1980s. And, as so often in hot, dry zones, artificial irrigation leads to salination of the soils: over 60 percent of the irrigated land now contains too much salt.<sup>578</sup> The affected territory can lose more than 80 percent of its fertility as a consequence. Moreover, farmers are using more water as they try to wash away salt residues by extensively flooding the land.<sup>579</sup>

### State-controlled production

Since 1991, cotton in Uzbekistan has lost some of its significance. This is because the Uzbek government, following the disintegration of the Soviet Union, ordered the cultivation of grain on part of the cotton fields as the country was cut off from food supplies from other areas of the former Soviet Union. Cotton did not, however, lose its dominant economic role: in 2009, Uzbekistan was still the world's sixth largest producer and the third largest exporter of this natural fibre.<sup>580</sup> To irrigate the fields, Uzbek farmers take almost as much water from the two large rivers as all of the other Central Asian countries do together.<sup>581</sup>

Current production levels of approximately one million tonnes of cotton fibre annually would not be possible without strict state provisions, for the cultivation of rice would be significantly more lucrative for farmers. Yet the government requires farmers to reserve about 60 percent of their land for cotton and to produce an amount specified by the local authorities. The farmers then sell their produce at a fixed low price to the state, which subsequently turns a large profit by exporting it to China, India, Bangladesh and Pakistan. If a farmer does not fulfil his production quota, he may well lose the land he leased from the state.<sup>582</sup>

About 40 percent of all working people in Uzbekistan depend on agriculture.<sup>583</sup> Due to highly volatile seasonal demand for labour, many of them are underemployed and indigent. Nationwide, more than a quarter of the population live in poverty.<sup>584</sup> There is only sufficient work in the fields at harvest time, between September and December. But the wages are low because the Uzbek government, like the Soviets, relies upon “voluntary labour” for the work-intensive cotton harvest. In autumn, many schools close and send children – and teachers – as cheap field labour. Up to one million children, some of them barely older than ten, must perform hard physical work without proper nutrition or remuneration. This can have dire consequences for the future, not only because the children miss part of the school year, but because they also often suffer injury or illness. There have even been reports of deaths.<sup>585</sup>

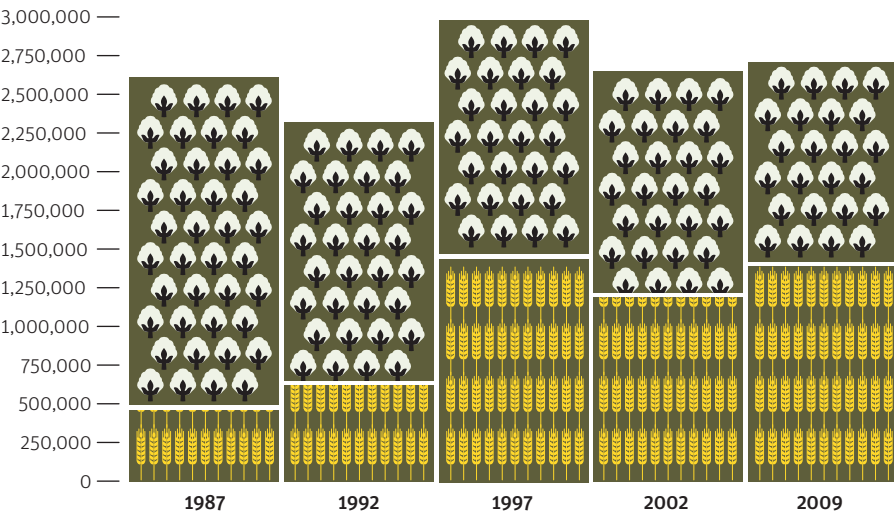
Labour Surplus

According to estimates, approximately 27.79 million people lived in Uzbekistan in 2010.<sup>586</sup> Measured in terms of inhabitants, this makes the country the third largest state, following Russia and Ukraine, to emerge from the former Soviet Union. Like all other countries in Central Asia, Uzbekistan is growing due to a very high birth rate. In 2009, the population grew by about 1.1 percent.<sup>587</sup> Another feature which the country has in common with neighbouring states is the emigration of young people who cannot find work in the domestic labour market. They are not only going to Russia, but increasingly to Kazakhstan, where the quickly growing economy promises employment.

The situation in the rural southern and western parts of the country is particularly desperate. The population in the southern oblasts of Qashqadarya and Surkhandarya has grown over 60 percent since the last Soviet census in 1989 while arable land has continued to shrink due to salination.<sup>588</sup> Even today, some regions of Uzbekistan count among the most densely populated in the post-Soviet space. These include Tashkent, the western area of Khorezm and, above all, the three eastern oblasts of Fergana, Namangan and Andizhan. These lie in the fertile Fergana Valley in the tri-border region between Kyrgyzstan, Tajikistan and Uzbekistan. Just about a third of the Uzbek population live in an area which constitutes less than ten percent of the country’s entire surface. In Andizhan, there are about 600 inhabitants per square kilometre: 20 percent more than in the Netherlands.<sup>589</sup>

Cotton plantations converted to wheat fields

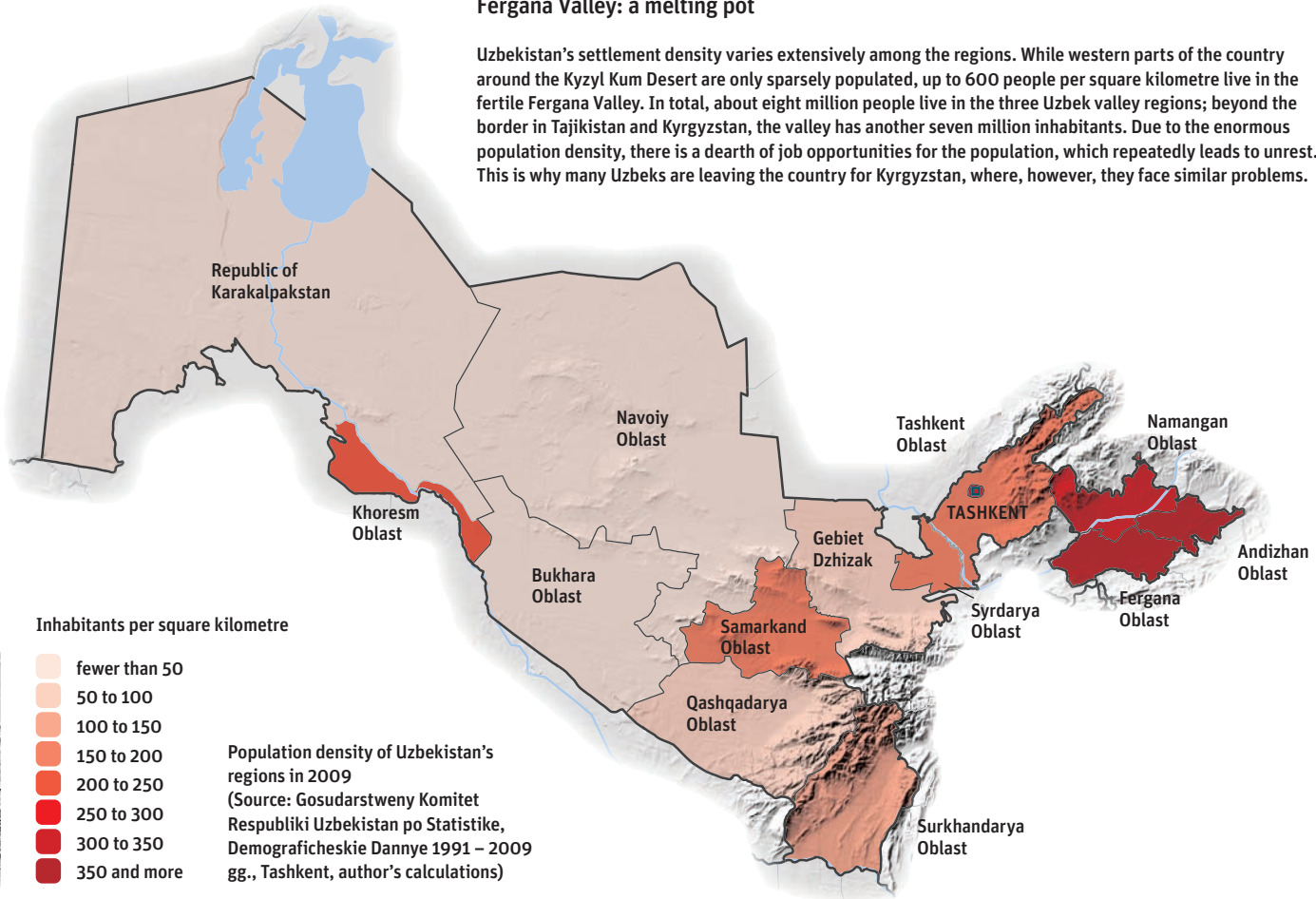
In the 1980s, the croplands used for cotton exceeded those for wheat several times. In the Soviet system, Uzbekistan was the centre of cotton production and received, in return, food from other areas of the country. This mechanism broke down following independence in 1991, which is why the Uzbek government has ordered the expansion of wheat cultivation. Although this adversely affects cotton cultivation, cotton remains the country’s second-most important export good following gold.



Cultivation areas for cotton and wheat in Uzbekistan in hectares  
(Source: United States Department of Agriculture, PSDOnline Database, Washington DC)

## Fergana Valley: a melting pot

Uzbekistan's settlement density varies extensively among the regions. While western parts of the country around the Kyzyl Kum Desert are only sparsely populated, up to 600 people per square kilometre live in the fertile Fergana Valley. In total, about eight million people live in the three Uzbek valley regions; beyond the border in Tajikistan and Kyrgyzstan, the valley has another seven million inhabitants. Due to the enormous population density, there is a dearth of job opportunities for the population, which repeatedly leads to unrest. This is why many Uzbeks are leaving the country for Kyrgyzstan, where, however, they face similar problems.



Due to high fertility rates, Uzbekistan's population is markedly young. The median age dividing the population into two equally-large groups of young and old is approximately 25. Only about six percent of Uzbeks are 60 or older. Since the average number of children per woman in the past five decades has continued to sink, however – from just under seven to 2.2 – the population will rapidly age in the upcoming years. According to United Nations projections, by 2030 the median age will have increased to about 33 and the percentage of people over 59 will have doubled, rising to 12.5 percent.

The economy could benefit from the fact that the working-age population – between 16 and 60 for men and 16 and 55 for women – will increase from 15.7 to 21 million. For 16 to 25-year-olds, who are currently affected most by unemployment and underemployment, developments look quite different. This group will shrink from 5.7 million to 5.2 million, or from 21.8 to 15.3 percent of the entire population.<sup>590</sup>

And yet, for Uzbekistan's already overstrained labour market, the increasing workforce is an added burden. It will be of crucial importance in the future to create new employment opportunities. In the field of agriculture, this may be impossible due to the country's environmental problems. The development of industry and the service sector, on the other hand, depends upon the success of attracting foreign investors to the country. Here, at least, there is a noticeable upward trend. Annual investments from abroad increased from 70 million US dollars in 2003 to 918 million dollars in 2008. A large amount of capital flowed into Uzbekistan's energy sector,

which has natural gas reserves of 2.8 trillion cubic metres.<sup>591</sup> Internationally, however, Uzbekistan lags behind with regard to foreign direct investments: its significantly smaller neighbour, Turkmenistan, received 820 million dollars in 2008. With almost 15 billion dollars, due to its enormous oil reserves, Kazakhstan is in another league entirely.<sup>592</sup>

That Uzbekistan was for a long time only moderately interesting to investors is due to its comparatively slow transition from a planned to a market economy. Unlike in many of the Soviet Union's successor states, president Islam Karimov only privatized the economy step by step; consequently, the state still exercises extensive control over the country's three key sectors: energy, gold and cotton. The gold industry, in particular, has enormous potential: Uzbekistan numbers among the world's ten leading gold producers and has numerous untapped deposits. The state Navoi Mining and Metallurgy Combine is responsible for 60 of the annually produced 80 tonnes. It is active in the world's largest open-pit gold mine in Muruntau in the Kyzyl Kum Desert.<sup>593</sup> The only foreign – and publicly-listed – enterprise in Uzbekistan's gold sector is Oxus Gold, which is controlled by a Chinese consortium and holds a 50 percent stake in the Amantaytau Goldfields joint venture directly near the Muruntau mine.

Many investors are discouraged by the limited convertibility of the local currency, the sum. It has officially been open to trade since 2003 but in fact often cannot be exchanged without restrictions. Other impediments to doing business in Uzbekistan include inadequate infrastructure and ubiquitous corruption. According to the "International Corruption Index" by Transparency International, the Uzbek government is among the world's ten most corrupt regimes.<sup>594</sup>

Uzbekistan does not fare much better in the World Bank's annual "Doing Business Index", in which it ranked 150 among 183 countries in 2010. At 178, it ranked especially poorly in the "Taxes" category, for which the complicated tax system and the overall burden, which constitutes an average 95 percent of profits, were responsible. Things did not look much better in the category "Transnational Trade", in which Uzbekistan ranked 174<sup>th</sup>. Settling an export transaction took, on average, 71 days and an import transaction as many as 92.<sup>595</sup> This deficit is particularly grave given the country's geographically convenient trade location on the former Silk Road.

### Birth control by decree

President Karimov, who has governed the country since its independence in 1991, is aware of the population pressures. At the beginning of his term of office, he tried to decrease the number of children per woman, which was about four at the end of the Soviet period.<sup>596</sup> It is the state-controlled media, above all, which provide information about contraception and family planning. Locally, so-called mahallas – something like non-governmental citizens' assemblies – provide information about birth control. According to the results of a survey among employees in the health sector, the government did not, however, stop at awareness-raising; it also urged physicians to implant IUD's into a specified number of patients. This was common practice even before independence.<sup>597</sup> Moreover, international organizations repeatedly denounce the fact that women in Uzbekistan are sterilized without their knowledge.<sup>598</sup>

By human rights standards, these measures are unacceptable. The Uzbek government has nonetheless reached a few of its goals by implementing them. Contraception, for example, has outstripped abortion as the main instrument of birth control and the total fertility rate has dropped to 2.3 children

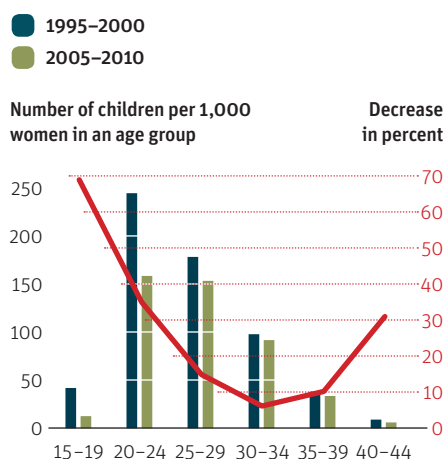
per woman.<sup>599</sup> On the whole, however, reproductive health has deteriorated: the number of sexually transmitted diseases, including Aids, has risen drastically since the mid-1990s. Drug consumption plays a large role in the spread of HIV infections, as it does throughout the post-Soviet space. The number of approximately 16,000 infected people in 2007, which was about 0.1 percent of the population, may be low by international standards. But in light of the fact that physicians only started registering the first cases in the mid-1990s, the virus is spreading rapidly.<sup>600</sup> The government is not entirely blameless in this, as it ignores the topic of reproductive health in its family planning campaigns, instead propagating the IUD and sterilization as contraceptive methods.<sup>601</sup> Condoms, which also protect people from sexually transmitted diseases, are still comparatively unpopular. Many feel that they do not fit Uzbek culture in which contraception is a woman's responsibility.

The decline in fertility rates in the last two decades cannot be attributed to governmental policies alone, however. Even before the fall of the Soviet Union, there was a noticeable downward trend in the number of children, characteristic of social development and modernization. It can also be assumed that the economic crisis accompanying the transition period adversely affected the number of children in Uzbekistan.



## Strong decline in births among young women

Since 1995, the number of children per woman in Uzbekistan has decreased from 3.1 to 2.3. The decline in fertility was greatest among young women between 15 and 24 years old. This trend has corresponded to an increase in women's average age of marriage since the mid-1990s. It cannot yet be determined whether or not this is a long-term development, since Uzbek women had married younger and younger in the previous decade. One reason for this could have been that they wanted to marry earlier after the Iron Curtain fell in response to economic uncertainty.<sup>602</sup>



Age-specific fertility rates in Uzbekistan from 1995 to 2000 and 2005 to 2010 and the decrease during this period in percent  
(Source: United Nations, World Population Prospects: The 2008 Revision Population Database, New York)

## Repression and Extremism

Despite all internal difficulties, president Karimov's regime is considered stable in regional comparisons. This is also due to the fact that the opposition is, to a great extent, suppressed. Usually, the government justifies the detainment of members of the opposition on the pretext that they are potential radical Islamists. Many experts, however, believe that Karimov is forging a political enemy from unquestionably existing extremist currents in order to legitimize his repressive style of leadership.<sup>603</sup>

Islam has indeed experienced a renaissance in Central Asia since the fall of the Soviet Union. Migration has not made societies more heterogeneous, as it has in Europe, but more homogenous and long-suppressed religions have become more significant to identity building. Between 1990 and 1997 alone, approximately a half million Slavs left the country.<sup>604</sup> Today, 80 percent of the population is of Uzbek descent. Russians and Tajiks each comprise five percent according to official estimates. Almost 90 percent of the inhabitants are Muslims.<sup>605</sup>

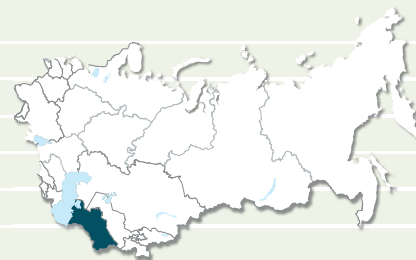
Shortly after independence, state-mandated Islam as propagated by president Karimov encountered opposition by radical Islamic organizations such as the "Islamic Movement of Uzbekistan" (IMU). Three bombings in the centre of Tashkent in spring 1999 just missed the president. Although the IMU has essentially been broken up, the globally operating organization Hizb ut-Tahrir is enjoying enormous influx in Central Asia. This organization also aims to overthrow the government and install a caliphate. Officially, Hizb ut-Tahrir supports overthrow by peaceful means but it does not exclude military force to reach its goal of state expansion.<sup>606</sup>

Hizb ut-Tahrir's stronghold is the densely populated Fergana Valley region. Again and again, there are conflicts between the populace and the state in this traditionally Islamic area. In 2005, this led to a tragedy when the military opened fire on demonstrators, killing several hundreds.<sup>607</sup> The government later claimed that military interference was necessary since militant Islamists were among the demonstrators. Other sources report, however, that tens of thousands of demonstrators had gathered in the central square of Andizhan to protest the arrest of 23 businessmen who had been detained as religious extremists.<sup>608</sup>

Although unique in scale, the unrest in Andizhan illustrates Uzbekistan's dilemma. Due to a lack of economic prospects, the population is discontent. Yet due to political oppression, it cannot openly demonstrate its frustration, becoming receptive to radical ideas. In the meantime, the situation in Fergana has escalated to such a point that Hizb ut-Tahrir would win a democratic election by a landslide. Karimov's regime is at a dead-end: nothing but a sustainable economic upturn creating jobs could put an end to the discontent and prevent further violence. Yet an unfinished reform agenda, political despotism and corruption stand in the way of recovery.

# TURKMENISTAN

Population in 2010	5.18 million
Population in 2030 (projection)	6.28 million
Population/km <sup>2</sup> of land in 2010	11
Total fertility rate in 2005-2010	2.50
Life expectancy at birth in 2005-2010	64.7
Annual net migration 2005-2010	– 5,000
Median age in 2010	24.7



(Source: see page 139)

## Dictatorship without data

In the centre of the Turkmen capital Ashgabat, the Ruhnama or “The Book of the Soul”, a stone monument weighing several tonnes, revolves. Its author, Saparmurat Niyazov, was president of the Central Asian country from 1990 until his death in 2006 and one of the modern world’s most bizarre dictators. The book was obligatory reading in all schools, universities and mosques – even at driving schools. Today, the pamphlet has been translated into 22 languages as it is the entrance ticket for businesses the world over to the Turkmen market. DaimlerChrysler and the Zeppelin construction machine company paid for the German translation.

Niyazov, who called himself “Turkmenbashi”, Leader of all Turkmens, was an absolute despot. He abolished pensions for a large portion of the population and closed opera houses, libraries and all hospitals outside the capital. In return, he gave every woman 38 US dollars on International Women’s Day. Following Niyazov’s death in 2006, the new president, Gurbanguly Berdimuhamedow, tried to abolish the worst manifestations of

the Niyazov cult. He edited out all mention of Turkmenbashi from the constitution and decreed that farmers and housewives get their pensions back.<sup>609</sup> Turkmenistan’s new ruler is not, however, entirely free of his own autocratic pretensions. For his 50<sup>th</sup> birthday, he awarded himself a 55 kilogram gold medal encrusted with 55 carat diamonds.

In contrast to his predecessor, Berdimuhamedow also plans to reduce Turkmenistan’s dependence on natural resources and to promote diversification of the economy. Accordingly, he has converted the city of Turkmenbashi on the Caspian Sea into a spa town. Three hotels in the “Avaza” project, intended to attract international tourists to the country, have already been festively opened. The leisure complex is supposed to be connected to a seven-kilometre artificial river by the time it is completed in 2020.

## A desert El Dorado

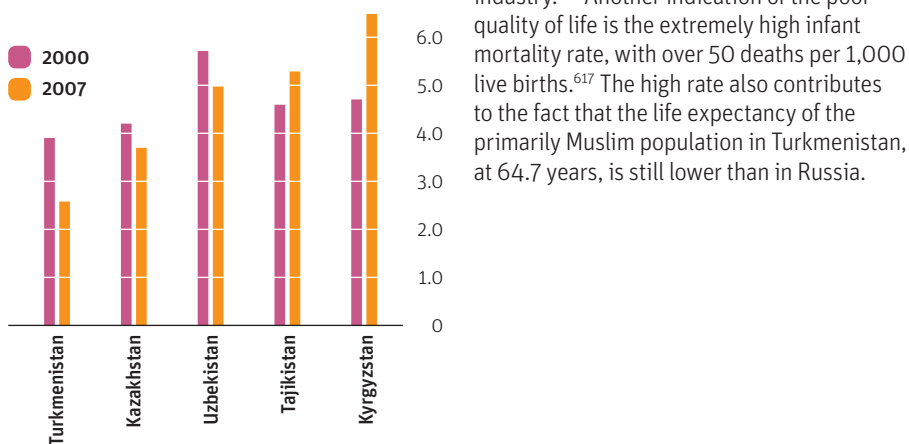
The country’s landscape, the surface area of which is larger than Germany’s by about half, is quite uniform. One of the world’s largest deserts, the Karakum, covers almost 95 percent of the territory. But the desert sand hides the resource that has made its dictators’ obscure construction projects and cult-status possible: natural gas. Following the most recent exploration of the Yolotan Gas Field, Turkmenistan’s gas reserves now contain more than eight trillion cubic metres or 4.3 percent of the world’s natural gas resources. Only Russia, Iran and Qatar have larger reserves.<sup>610</sup>

At current production levels, Turkmen natural gas reserves would last over 100 years. But production will probably increase soon since the country has experienced a veritable pipeline building boom in the last three years. In December 2009, the so-called Silk Road Pipeline connecting Turkmenistan to China was opened. In the near future, the Pre-Caspian Pipeline, which will measure

1,700 kilometres, will also be built to connect the city of Turkmenbashi with Russia's Alexandrov Gay. The pipelines will each transport 30 billions of cubic metres of natural gas annually. As of 2015, the Nabucco Pipeline will also pump this much Turkmen and Azerbaijani gas to Europe.<sup>611</sup> And Iran also wants to increase its imports from Turkmenistan from eight to 20 billion cubic metres annually using a second pipeline which has already been completed.<sup>612</sup>

### Crisis facing the health care system

At the beginning of the century in the oil and gas exporting countries of Kazakhstan, Uzbekistan and Turkmenistan, expenditures for health care could not keep up with economic growth rates. In 2007, health care expenditure in Turkmenistan constituted only 2.6 percent of GDP; worldwide, this value was lower in only seven other countries. In contrast to this, developed countries invest about ten percent of their income in health. Turkmenistan's low investment is, in addition to the general downfall of the health sector under Niyazov's rule, due to corruption, for frequently only those receive treatment who significantly augment regular physicians' fees under the table.<sup>613</sup>



Percentage of health care expenditure in GDP, 2000 and 2007  
(Source: World Health Organization, World Health Statistics, Geneva)

### The population does not benefit

There are little reliable data or figures on Turkmenistan and its population. These are not recorded in this sealed-off country or, at least, not published. Only estimates by international organizations are able to supply a fragmentary portrait of the situation.

What is certain is that GDP per capita has significantly grown since 2000 due to the natural gas boom, from about 1,900 to over 5,900 international dollars in 2009. This was double that of neighbouring Uzbekistan and has made Turkmenistan, following Kazakhstan, Central Asia's second-richest country.<sup>614</sup> The economic boom, which is controlled to a great extent by the state, has not benefited the population, however. According to estimates, up to 70 percent of the working-age population are unemployed or underemployed and a large share of these people live in abject poverty.<sup>615</sup>

The price boom on international natural resource markets has meant that Turkmenistan's agriculture – dominated by a cotton sector constituting 24 percent of all economic activity in 2000 – only contributed ten percent to GDP in 2009, even though a major portion of the employed work in this industry.<sup>616</sup> Another indication of the poor quality of life is the extremely high infant mortality rate, with over 50 deaths per 1,000 live births.<sup>617</sup> The high rate also contributes to the fact that the life expectancy of the primarily Muslim population in Turkmenistan, at 64.7 years, is still lower than in Russia.

### A lot of Turkmen, few Russians

Turkmenistan's population is very young. In 2009, about 69 percent of its 5.1 million inhabitants were younger than 35 years old and only about five percent were 65 or older. In the 1960s and 1970s, the average number of children per woman was six and only began to sink gradually in the following years. Today, women in Turkmenistan have an average of 2.5 children so that the current population growth of an annual 1.3 percent will slow down to 0.2 percent by 2030. Nonetheless, Turkmenistan's population size of 6.3 million in 2030 will be higher than in 2009 by 23.5 percent. Among the Soviet successor states, only Tajikistan is growing more rapidly. The surplus in births even offsets annual migration losses of approximately one person for every 1,000 inhabitants.<sup>618</sup>

Since 1990, primarily Russians, Uzbeks and Kazakhs have emigrated despite officially closed borders.<sup>619</sup> While most of the urban Russian population has left the country due to nationalistic tendencies in Turkmen society, the Kazakhs, who live primarily in the country's north, have left due to environmental problems which have resulted in the drying out of the Aral Sea. Additionally, the Kazakh government's repatriation policies have attracted many compatriots.

As a result of the emigration of other ethnic groups, Turkmenistan is steadily becoming more homogenous. While the share of Turkmen constituted 72 percent of the entire population in 1989, it was 85 percent when the last census was taken in 2003. Alongside the Turkmen population, only the number of Uzbeks rose, from about two to five percent, due to high birth rates.<sup>620</sup>

# KYRGYZSTAN

Population in 2010	5.55 million
Population in 2030 (projection)	6.54 million
Population/km <sup>2</sup> of land in 2010	28
Total fertility rate in 2005-2010	2.56
Life expectancy at birth in 2005-2010	67.8
Annual net migration 2005-2010	– 15,000
Median age in 2010	25.1



(Source: see page 139)

## Ethnic upheavals

Following independence in 1991, Kyrgyzstan was seen as an island of democracy in Central Asia. President Askar Akayev seemed open to reform at the beginning of his rule and the country's three largest population groups – the Kyrgyz, the Russians and the Uzbeks – lived in relative harmony. The bloody unrest in the southern Kyrgyz city of Osh in which the Uzbek and the Kyrgyz populations had fought over land rights in 1990 seemed to have been forgotten.

Barely two decades later, the picture has changed. The island of democracy has long disappeared and daily life in Kyrgyzstan is characterized by insufficient food, inflationary energy prices and massive corruption. In April 2010, this led to the downfall of president Kurmanbek Bakiyev, who had violently ousted the increasingly authoritarian Askayev in 2005. Following this revolution, the situation escalated in the southern part of the country. Kyrgyz gangs attacked members of the Uzbek minority for days. It is possible that the attacks were incited by Bakiyev's family, which tried to destabilize the transitional government quickly.<sup>621</sup> Hundreds lost their lives in the conflicts and tens of thousands fled to neighbouring Uzbekistan.<sup>622</sup>

### North-south divide

According to national estimates, the Kyrgyz were the largest ethnic population group in 2009, constituting 69.6 percent of the total population of 5.28 million; the United Nations put the population for the same period at 5.48 million. The Uzbek and Russians followed the Kyrgyz as the next-largest ethnic groups at 14.5 and 8.4 percent respectively, followed in turn by 80 smaller minorities.<sup>623</sup> The largest part of the Russian minority lives in the northern Chui Valley surrounding Bishkek. The Uzbek live primarily in the south, in the oblasts of Osh and Jalalabad in the Fergana Valley. The two valleys, which are home to 75 percent of the total population, are separated by the Tian Shan Mountains and thus quite isolated.<sup>624</sup> They have only been connected since 2003 by a paved street passable year-round.

For historical reasons, living circumstances vary greatly in the north and south: the north, which borders the steppe of Kazakhstan, is the country's economic centre. Soviet

planners settled the textile, food and electricity industries here, which is why a relatively large number of people live in cities. In the more rural south, many people live as farmers and poverty is a great problem. In 2007, GDP per capita in Bishkek was, at about 4,500 international dollars, three times greater than in Osh, the country's second-largest city. The economic strength of the other northern oblasts of Chui, Issyk-Kul and Talas is also significantly greater than that of all southern areas.<sup>625</sup>

Russian settlement in the region began at the end of the 19<sup>th</sup> century, shortly after Czar Alexander II conquered the Khanate of Kokand, which contained today's Kyrgyzstan. The fertile Chui Valley quickly became a popular destination among Russian farmers, who drove away many of the Kyrgyz nomads living in traditional yurts towards China. Later, the Soviets continued to pursue these policies.<sup>626</sup> The share of ethnic Russians in the total population rose as a consequence, from 5.9 percent in 1926 to 30.2 percent in 1959. It was primarily during World War II that their numbers increased dramatically, since the Soviet rulers evacuated their



industries from western regions to today's Kyrgyzstan, among other places. Since the 1960s, the ethnic Kyrgyz population, which constituted but 40.5 percent of the total population at the end of the 1950s, has gained in significance compared to Russians due primarily to high numbers of children.<sup>627</sup>

The trend towards a more homogenous population has continued since independence in 1991. Between the last Soviet census in 1989 and 2009, the number of ethnic Russians sank from 917,000 to 440,000; in the same period, the entire population grew by a fourth from 4.33 to 5.48 million people.<sup>628</sup> This means the Russians have lost their status as the largest minority to the Uzbeks. There were about 767,000 of the latter living in Kyrgyzstan in 2009. In 1989, there had been but 550,000 Uzbeks. The Kyrgyz increased in this period from 2.23 million to 3.67 million.<sup>629</sup>

Due primarily to emigration, the Russian minority in Kyrgyzstan has shrunk in the two decades since independence. As in other Central Asian countries, many Russians fled from the major economic crisis of the 1990s, as a result of which real GDP per capita decreased by about 40 percent while the annual inflation rate increased to over one thousand percent.<sup>630</sup> For the economies of all Central Asian countries, particularly in the industrial sector, the mass emigration of Russians was a major loss, as Russians were, on average, better educated than the "titular" peoples for whom the country was named. Prior to 1991, Russians had accounted for about half of all of Central Asia's engineers.<sup>631</sup>

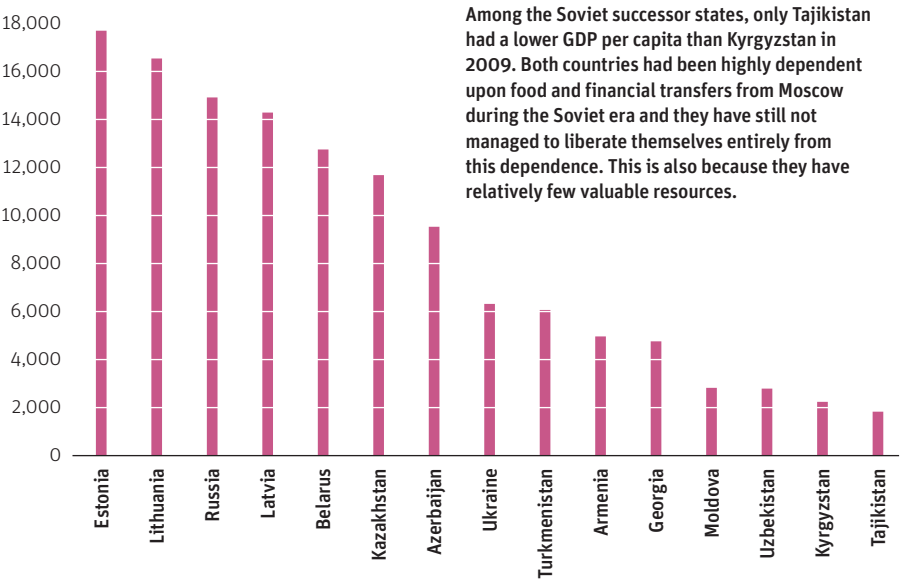
Those Russians who did remain in Kyrgyzstan also have significantly fewer numbers of children than the rest of the population, as the last Demographic and Health Survey in 1997 showed. Kyrgyz women had an average of 3.6 children while Russian women in Kyrgyzstan bore an average of 1.5 children. And the growing Uzbek population also has high fertility rates: Uzbek women had the most children among the three largest ethnic groups, with an average of 4.2 children.<sup>632</sup>

In 2008, the average number of children per woman in Kyrgyzstan, according to information by the United Nations, was 2.56; according to the National Statistical Committee, it was 2.81. It is remarkable that the figure has significantly increased since the beginning of this century; in 2001, it had merely been 2.38. This increase, which distinguishes Kyrgyzstan from its neighbours Tajikistan and Uzbekistan, is almost entirely traceable to an increase of children in the cities, where rates rose throughout the entire period from 1.7 to 2.57 children per woman. In rural areas, there was only an increase from 2.93 to 2.99.<sup>633</sup> Both the improved economic situation and the emigration of ethnic Russians play a role in this development. The Russians lived primarily in the cities and contributed to lower fertility rates.

Since rural areas still have markedly higher birth rates than cities, the most significant population growth of 20 percent by 2030 will take place here.<sup>634</sup> This will mostly benefit the southern part of country, where 57 percent of the population already live.<sup>635</sup> However, the rapid population growth of the Uzbek minority, in particular, contains continuing potential for tension. The Uzbeks have long dominated the markets in the south although their demands for greater political participation and a greater role for the Uzbek language have so far been largely ineffective. On the contrary, since 1996, Russian has been the second official national language.

**The poorhouse of the former Soviet Union**

Among the Soviet successor states, only Tajikistan had a lower GDP per capita than Kyrgyzstan in 2009. Both countries had been highly dependent upon food and financial transfers from Moscow during the Soviet era and they have still not managed to liberate themselves entirely from this dependence. This is also because they have relatively few valuable resources.



GDP per capita in the Soviet successor states in international dollars in 2009  
(Source: IMF, World Economic Outlook Database, Washington DC; the data for Kyrgyzstan, Tajikistan and Turkmenistan are estimates)

## Problems with neighbours

As in the neighbouring states, the high birth rates in Kyrgyzstan have also led to a labour surplus, which is why especially people from the poorer southern regions have left the country. As a result, it is no longer only Russians but increasingly Kyrgyz who have been migrating north. In 2008, they constituted 37 percent of emigrants, essentially equalling the Russians.<sup>636</sup>

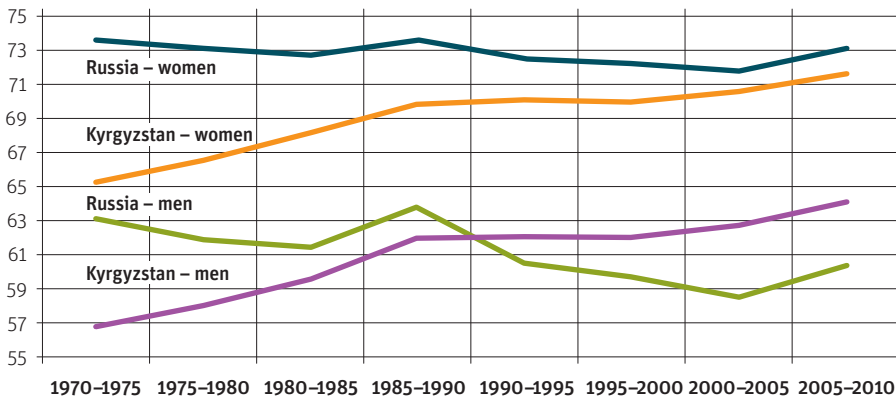
According to estimates, there were between 300,000 and 500,000 Kyrgyz working in Russia and Kazakhstan as early as 2005.<sup>637</sup> In 2008, remittances by migrants constituted 27.9 percent of GDP and were the most important means of alleviating poverty.<sup>638</sup>

Another problem which Kyrgyzstan shares with its neighbours is drug smuggling, which is the only way many people can earn their money. About 20 tonnes of narcotics cross Kyrgyz territory every year.<sup>639</sup> On top of this, there are repeated conflicts with the neighbouring countries in the valley over access to water.

Kyrgyzstan has better relations with its eastern neighbour, China, which despite corruption and uncertain legal norms has invested extensively in new goldmines and Kyrgyzstan's infrastructure. Today, gold is Kyrgyzstan's most important export good and it is precisely for the mining of this precious metal that the country is dependent upon foreign investors, generally as partners in joint ventures with the state corporation Kyrgyzaltyn. Majority owners of the largest mine, the Kumtor Gold Mine, located at 4,000 metres in the country's northeast, is the Canadian Centerra Gold. The company produces 90 percent of the country's gold.<sup>640</sup> Its main buyer is Switzerland, which has become the world's largest importer of Kyrgyz products.<sup>641</sup>

## Kyrgyz men live longer than Russian men

Despite the economic crisis, life expectancy in Kyrgyzstan in the early 1990s decreased only minimally, in contrast to Russia, where chances of survival decreased dramatically – especially for men. Men in Kyrgyzstan live about four years longer than their Russian counterparts despite the lower level of development. Women in Russia can still expect to live longer than women in Kyrgyzstan, but they have also lost a lot of ground. Interestingly, the life expectancy of Russian men and women within Kyrgyzstan, despite their higher socio-economic status, sank more markedly than that of the titular population. Apparently, the two population groups have responded differently to financial uncertainty: Russian men and women tended to adopt unhealthy lifestyles.<sup>642</sup>



Life expectancy at birth by sex in Kyrgyzstan and Russia, 1970 to 2010

(Source: United Nations, Population Prospects: The 2008 Revision Population Database, New York)

But trade between China and Kyrgyzstan, the only two WTO members in the region, is also flourishing: between 2006 and 2008 alone, the trade volume tripled, due almost exclusively to Kyrgyzstan's increasing imports. Following Russia, China was Kyrgyzstan's second-most important trade partner in 2008.<sup>643</sup> Many Kyrgyz feel China's influence, however, is going too far. They fear competition from the 100,000 Chinese labourers living in Kyrgyzstan as well as the traders selling their commodities on the Central Asian market. Ethnic violence against the Chinese is no longer a rarity.<sup>644</sup>

Due to its economic structure, Kyrgyzstan is extremely dependent upon world market prices for energy and food, as the country imports both. This means that in times of increasing prices, the country quickly faces

crisis, as it last did in 2008 when Bishkek city districts were cut off from the power supply system on a rotating basis. In order to make Kyrgyzstan a more attractive production site in the future, it will require, above all, a better-educated population. After 1991, teachers emigrated extensively due to low pay, forcing some schools to offer morning and afternoon shifts. And the teaching materials are insufficient. There are similar problems in higher education: although there were 48.3 students per 1,000 inhabitants in 2007, constituting the highest student quota in Central Asia, there is a dearth of qualified teaching staff.<sup>645</sup> Furthermore, the ones who actually complete a degree are those paying up front.<sup>646</sup>



# TAJIKISTAN

Population in 2010	7.08 million
Population in 2030 (projection)	9.62 million
Population/km <sup>2</sup> of land in 2010	49
Total fertility rate in 2005-2010	3.45
Life expectancy at birth in 2005-2010	66.7
Annual net migration 2005-2010	– 40,000
Median age in 2010	20.7



(Source: see page 139)

## When growth becomes a problem

In Tajikistan, whoever does not have a share in the Rogun Dam, a huge national construction project, or cannot prove that he or she has donated to it, must fear consequences: students, for example, risk losing their placements. And in one region of the country, several teachers have lost a day's wages. The money flowed into the dam. Since the Russian aluminium company Rusal has pulled out as an investor, the leviathan endeavor urgently needs capital.<sup>647</sup>

The dam, the planning of which hails back to the Soviet era, would be a milestone in Tajikistan's history: the dam's wall on the Vakhsh River in the centre of the country is supposed to reach 335 metres in height, which would be a world record. With a total capacity of 3,600 megawatts, the plant could supply as much electricity as three modern nuclear power plants together. The country's electricity production would increase by more than 75 percent at a single

stroke.<sup>648</sup> For the first time, Tajikistan would be self-sufficient with regard to energy. Furthermore, it would be able to supply electricity to Afghanistan, Pakistan and China, thereby importing much-needed foreign currency. Currently, the aluminium industry devours a vast amount of electricity, while the population depends on firewood to survive the ice-cold winters in a country with 93 percent mountain coverage. The state aluminium corporation Talco alone produces over 400,000 tonnes of raw aluminium annually, using 40 percent of Tajikistan's total energy resources.<sup>649</sup>

For the impoverished Tajikistan, however, building the dam is an almost impossible financial challenge. In order to build just two of the six generators, the state needs about a billion US dollars, which it aims to collect by selling shares to the entire population.<sup>650</sup> Whether this can succeed without applying more pressure is questionable, for few people voluntarily purchase shares whose price greatly exceeds the average monthly income.

Finances are not the only impediment on Tajikistan's path to energy self-sufficiency. Its neighbour, Uzbekistan, has vehemently tried to stop the dam because the water of the Amu Darya, which flows towards the Aral Sea, itself created from the confluence of the Vakhsh and the Panj Rivers, is urgently needed in the summer to irrigate the Uzbek and Turkmen cotton fields in the valley. At this time of year, however, the Tajiks want to dam up the water from the mountain regions in order to produce electricity throughout the winter. The Uzbek government has also pointed to the region's earthquake risk. Meanwhile, experts suspect that Uzbekistan wants to prevent the building of the dam primarily to ensure Tajikistan's dependence upon Uzbekistan's natural gas supplies.<sup>651</sup>

## Civil war and economic crisis

The roots of today's feud between both countries lay in the Soviet era, when the state ruled that Tajikistan and Kyrgyzstan should supply their western neighbours with water, receiving natural gas in return. In various treaties, the Central Asian states agreed after 1991 to maintain the old agreement, but they rarely fulfilled their obligations. Additionally, Uzbekistan sold its fuel to neighbours at internationally competitive prices, while Tajikistan was unable to make comparable profits with its water. At the end of October 2009, Uzbekistan temporarily cut off its energy supply to Tajikistan, thereby encouraging its eastern neighbour to continue with the dam project.

Now the Tajiks are Persian and the Uzbeks Turkish, but in the Czarist era, ethnic background played a subordinate role in the groups' relationship. The Islamic religion binding both peoples was more important. Even less educated people generally spoke both Tajik and Uzbek. It was only when Stalin separated the Tajik Soviet Socialist Republic from the Uzbek SSR in the wake of "national demarcation" in 1928, promising Uzbekistan the significant Tajik centres of Samarkand and Bukhara, that the region developed something akin to a national awareness. Oppressed in the Soviet era, this led in the 1990s to increasingly frequent, if smaller, conflicts.

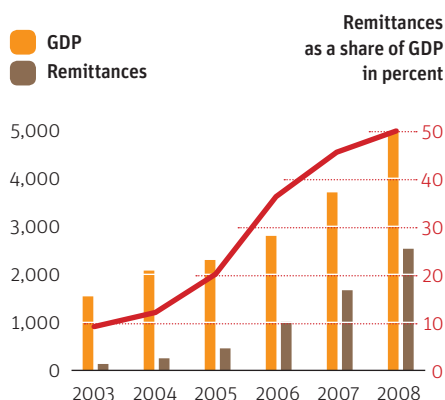
In 1992, a year after the country was founded and Tajikistan's first democratic elections were held – from which the former Soviet cadres emerged victorious – the country was plunged into a bloody civil war. By the war's official end in 1997, at least 50,000 had lost their lives and many more people had been displaced.<sup>652</sup> The insurgents, comprised of both liberals and Islamists and who recruited their supporters primarily from the central Tajik city of Gharm and the eastern region of Gorno-Badakhshan, faced massacres by governmental troops following their decisive defeat in 1993 and fled by the tens of thousands to neighbouring Afghanistan.<sup>653</sup> A large number of ethnic Russians living in Tajikistan had already fled to Russia during the war. Estimates put their number at about 400,000.<sup>654</sup>

The economic consequences of the civil war were also devastating: the country's real GDP was halved between 1992 and 1996, which meant that three-fourths of the population had to survive on incomes below poverty level.<sup>655</sup> The yield from cotton production, which was extremely important as an export and to which Tajikistan devoted a large portion of its paltry arable land, decreased to 312,000 tonnes by 1996. Prior to independence, cotton production had yielded an average of 800,000 tonnes.<sup>656</sup> Due to crop shortfalls and sinking prices on the world market, export revenues were no longer sufficient to import urgently needed food for the growing population – for Tajikistan is not in a position to supply its own food due to the cotton monoculture introduced by the Soviets.

Today, farmers are still suffering from the crisis of the 1990s: when the Tajik government converted the kolkhozes and sovkhozes in 1996 into so-called dehkan farms, these had huge debts. The farmers, who have since had to lease their land from the state, are legally bound to take over the debts of the collective farms. Nor do they have much possibility of restructuring their farms, as Tajikistan, like Uzbekistan, dictates production. Farmers must set aside between 60 and 75 percent of their croplands for cotton production. They can only export their yield, however, through the state, which claims a major portion of profits.<sup>657</sup>

### Tajikistan's most important economic pillar

After the Tajik government abolished several hurdles for migrant workers at the beginning of this century, the volume of remittances jumped significantly. Up through 2008, it grew even faster than the Tajik economy, which was recuperating from the crisis of the 1990s. Remittances reached a peak in 2008, when they constituted about 2.5 billion US dollars or more than 50 percent of Tajik GDP. In 2009, remittances plummeted as a result of the economic crisis.



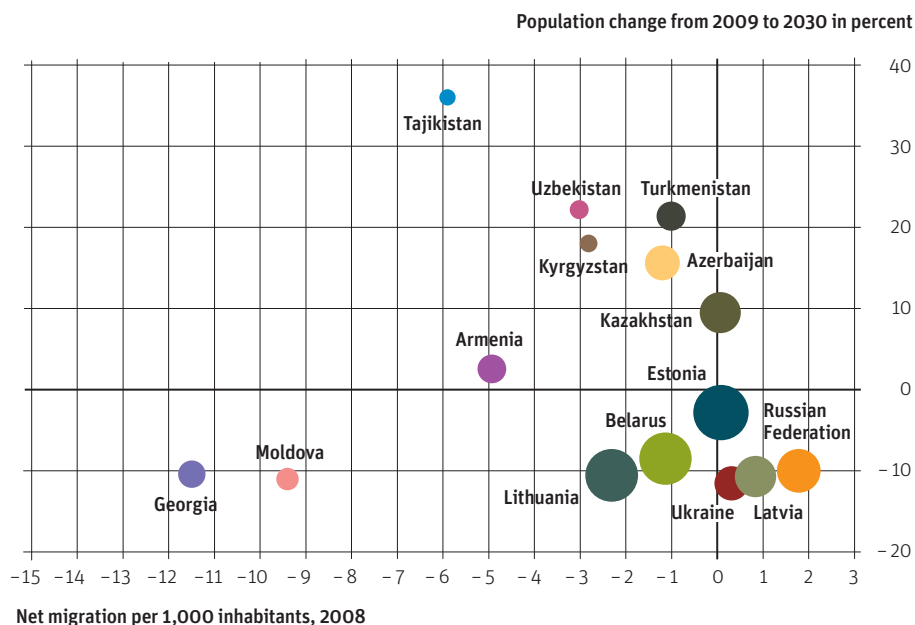
GDP in and remittances to Tajikistan in million US dollars between 2003 and 2008  
(Source: World Bank, World Development Indicators Database, Washington DC)

### Labour migrants: Tajikistan's life insurance

In order to flee the hopelessness of post-war Tajikistan, many young Tajiks migrated to Russia, though few of them had legal residency permits. Until today, at least a million Tajik nationals in search of work have left the country either temporarily or permanently. While Tajikistan has lost about 20 percent of its working-age population to migration, the country would be much worse off without its emigrants. These transfer a significant amount of their wages,

## Great population growth despite massive emigration

Almost all successor states of the Soviet Union which will experience population growth through 2030 are now losing people to emigration. Only Kazakhstan has positive net migration. The countries with growing populations are all located outside of Europe and are economically less developed (Kazakhstan is an exception). Traditional lifestyles ensure birth surpluses over deaths, which exceed losses due to migration. This trend is strongest in Tajikistan: in the poorest country of the former Soviet Union, the population will increase the most through 2030, by over 35 percent. The opposite is true in the European Soviet successor states, where low birth rates are leading to shrinking populations.



which significantly exceed average earnings in Tajikistan, to their families back home. In 2008, the official total volume of remittances was about 2.5 billion US dollars. This was about half of Tajik GDP; worldwide, a uniquely high value. This means that migrant workers have contributed significantly to the drop in poverty to 44.4 percent – high though this still is.

Despite the remittances, the Tajik government long remained sceptical of labour migration and even condemned it as traitorous. Until 2001, the state placed a 30 percent tax on international money transfers. Emigrants were virtually forced to bring the money back personally and then often fell victim to robbery or the capriciousness of border controls and the police. Following the abolishment of the tax, bank transfers became the preferred method of sending money. More relief came in 2002: the government abolished the emigration visa for which migrants previously had to apply. In 2004, Russia and Tajikistan signed an agreement which formally recognized the rights of migrant workers and which was intended to fight illegal migration.<sup>661</sup> But many Tajiks still reside illegally in Russia.<sup>662</sup>

Net migration in 2008, population change until 2030 and GDP per capita in the former Soviet states. The size of the circles indicates GDP per capita in international dollars.

(Source: IMF, World Economic Outlook Database, Washington DC, author's calculations; United Nations, World Population Prospects: The 2008 Revision Population Database; National statistical offices)

The extensive wave of labour migration has also made Tajikistan extremely dependent upon Russia's economy. When it faced crisis in 2009, transfers fell by 30 percent.<sup>663</sup> And it is especially the construction industry in which many Tajiks earn their wages, which is sensitive to economic fluctuations. Tajikistan's long-term economic development also profits little from the transfers, which flow to a great extent into private consumption. Only about 15 percent of this income is invested, and then more often in private property rather than in new businesses or capital goods.<sup>664</sup>

## Population pressure meets a weak labour market

Despite emigration, Tajikistan's population is the fastest-growing of all former Soviet republics. While only five million people lived in the mountain republic in 1989, more than seven million lived there in 2010, an increase of more than a third.<sup>665</sup> This can be explained by the fact that women in Tajikistan still have more than three children on average. This is about two fewer children than in the 1980s, but significantly more than necessary for stable population numbers. Annually, births exceed deaths by about 150,000. Due to the number of children, Tajikistan's population is also very young: about half the Tajiks are not even 20 years old. In the near future, more and more women will reach childbearing age between 15 and 44, leading to further population growth. The United Nations estimates that in 2030, there will be about

9.6 million people living in Tajikistan, which would be more than 35 percent more than today.<sup>666</sup>

Because the Tajik labour market is not in a position to absorb the steady increase of young people, such strong population growth carries risks. In the first half of 2009 alone, about 150,000 more people were burdening the domestic labour market, because demand for migrant labour in Russia had diminished considerably in the wake of the economic crisis.<sup>667</sup> There are no reliable data, however, on unemployment. Nonetheless, the official estimate of 2.2 percent bears little relationship to reality.<sup>668</sup> The low employment estimate of 50.5 percent makes it clear that many people keep their heads above water on subsistence farming or depend upon family members.<sup>669</sup>

## Opium trade route

Since it is difficult to earn money legally in Tajikistan, many young men end up in the drug trade. Turnover in this business is estimated at about 30 percent of Tajik GDP.<sup>670</sup> Thanks to a border extending over 1,300 kilometres to Afghanistan, which produces over 90 percent of the world's opiates, Tajikistan is ideally located to serve the steadily increasing demand for opium and heroin in Russia.<sup>671</sup> The civil war and the difficult economic situation of the transition

period, as well as extensive corruption, created fertile soil in the mid-1990s for the drug trade, which has been booming ever since. In 1996, Tajik police forces seized the first six kilograms of smuggled heroin. Barely a decade later, over 5,000 kilograms were seized annually, before a recent decrease to about 2,000 kilograms.<sup>672</sup> According to estimates, a total of 40 to 80 tonnes of pure heroin pass through Tajikistan every year on their way north or west. This is about a fourth of total Afghan production.<sup>673</sup> The rapid spread of HIV in Russia and other former Soviet states, in which about 50 to 95 tonnes of heroin are consumed per year, would not have been possible without this transit route.

## Data for Georgia, Armenia, Azerbaijan, Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan and Tajikistan

		Demography					Economy				Population projection 2010-2030 (percent)
		Cluster	Total fertility rate 2009	Population aged 59 and older 2009 (percentage)	Life expectancy 2009 (years)	Net migration per 1,000 inhabitants (mean 2006-2009)	Cluster	Gross domestic product per capita 2008 (International dollars)	Expenditures on research and development 2008 (percentage of GDP)	Employment 2008 (percentage of age group 15 to 59)	
Data for Georgia, Armenia, Azerbaijan, Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan and Tajikistan											
GEORGIA											
GE	Georgia	2	1.58	18.1	71.6	− 11.5	4	4,907	0.2	56.5	− 11.0
ARMENIA											
ARM	Armenia	2	1.74	14.4	73.7	− 4.9	4	5,809	0.2	57.3	2.5
AZERBAIJAN											
AZ	Azerbaijan	5	2.16	8.9	70.2	− 1.2	3	8,728	0.2	74.4	15.9
KAZAKHSTAN											9.7
KZ1	Akmola Oblast	4	2.19	12.2	66.2	− 6.5	3	7,004	0.1	81.8	
KZ2	Aktobe Oblast	5	2.70	8.8	68.2	− 0.9	3	13,443	0.1	78.5	
KZ3	Almaty Oblast	5	2.65	9.3	68.6	1.5	3	4,468	0.1	73.3	
KZ4	Atyrau Oblast	5	3.29	7.2	68.2	2.8	1	39,593	0.1	76.3	
KZ5	West Kazakhstan Oblast	5	2.29	10.9	68.6	− 1.4	3	14,625	0.1	74.9	
KZ6	Zhambyl Oblast	5	3.20	8.4	68.7	− 6.6	3	3,460	0.4	81.9	
KZ7	Karagandy Oblast	4	2.04	12.5	66.9	− 0.6	3	11,884	0.1	77.5	
KZ8	Kostanai Oblast	4	1.70	13.9	67.8	− 5.3	3	8,623	0.0	85.7	
KZ9	Qysylorda Oblast	5	3.42	6.7	67.5	− 5.7	3	11,748	0.0	72.2	
KZ10	Mangystau Oblast		3.80	5.5	68.3	19.6	1	28,728	0.3	71.6	
KZ11	South Kazakhstan Oblast	5	3.71	6.4	69.5	− 2.1	3	3,389	0.1	73.8	
KZ12	Pavlodar Oblast	4	1.98	12.1	68.0	− 1.9	3	12,596	0.0	78.7	
KZ13	North Kazakhstan Oblast	4	1.72	13.7	67.3	− 7.4	3	6,759	0.0	83.0	
KZ14	East Kazakhstan Oblast	4	2.07	13.3	67.2	− 5.4	3	6,856	0.5	74.8	
KZ15	Astana		2.44	8.1	75.7	38.1	1	22,714	0.4	74.6	
KZ16	Almaty		2.65	11.5	72.2	14.5	1	23,948	0.5	71.3	
UZBEKISTAN											
UZ	Uzbekistan	5	2.29	6.2	67.7	− 3.0		2,607		66.9	22.8
TURKMENISTAN											
TM	Turkmenistan	5	2.50	6.1	64.7	− 1.0		5,764			21.9
KYRGYZSTAN											
KS	Kyrgyzstan	5	2.56	7.3	67.8	− 2.8	3	2,204	0.3	68.1	18.4
TAJIKISTAN											
TJ	Tajikistan	5	3.45	5.1	66.7	− 5.9	4	1,793	0.1	59.7	37.3

# INDICATORS AND METHODS

What are the regional demographics of the former Soviet Union? To what extent are a region's demographics related to its wealth and economic structure? How do current developments affect the regions' future?

In order to answer these questions, the Berlin Institute for Population and Development has selected seven demographic and economic indicators and submitted these to two separate cluster analyses. The classification illustrates the complex developments in the post-Soviet space by identifying and distinguishing regions facing similar challenges.

The analyses focused on all Soviet successor states. As a rule, the first sub-national administrative level was considered; in most countries, these regions are called oblasts. In Russia, the 80 oblasts, krais, republics and autonomous cities have constituted the second-highest administrative level since Vladimir Putin created eight federal districts. Nonetheless, they formed the basis of analysis since their size and population numbers compare most closely to regions in other countries. A few states were considered on the national rather than regional level. This was the case when further sub-divisions would have led to very small units, both in terms of space and population, or when no

reliable regional data were available. The countries considered on the national level included the three Baltic states, Moldova, Georgia, Armenia, Azerbaijan, Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan. The analysis encompassed a total of 141 regions and countries.

The selection of indicators was made on the basis of theoretical knowledge in demography and economics: in the field of demography, the total fertility rate, life expectancy at birth, net migration per 1,000 inhabitants (in order to eliminate short-term economic fluctuations the mean for the years 2006 to 2009 was calculated) as well as the share of the over-59s in the total population. The first three indicators are the most important parameters in the field of demography and the basis for all population projections. The age structure of the population, in this case the share of elderly people, provides important additional information about age group ratios within a single region. Among other things, it allows assertions about the future size of the labour force and the burdens facing social security systems.

In the field of economics, GDP per capita was chosen as a general welfare indicator. In order to ensure cross-regional and cross-country comparability, GDP has been expressed in international dollars, a hypothetical currency which eliminates differences in price levels. Conversion was made in two steps. First, differences in purchasing power within Russia were eliminated using a regional consumer price index calculated by Rosstat; then all regional and national values were converted to international dollars. The International Monetary Fund provides conversion factors for all countries.

In addition to GDP, an employment indicator was also selected. This illustrates to what extent a region's economic strength actually benefits people and to what extent the regular labour market is developed. When unemployment takes root and the shadow economy expands, an economy cannot make effective use of its human capital and public coffers lose tax revenues for future investments. In order to guarantee the highest possible degree of comparability, the number of all employed persons was put in relation to the number of people between 15 and 59 years old.

In order to make assertions about future economic sustainability, the analysis also included expenditures on research and development in percentages of GDP. This made it possible to measure a region's potential for securing long-term welfare based on innovation. We would also have liked to consider foreign direct investments in order to make a statement about how far regions can modernize their economies by means of technology transfer and outside aid. Unfortunately, however, no comparative data were available.

In preparation for the cluster analysis, all indicators were standardized using z-scores. This made it possible to avoid unequal weights arising from different scales of measurement. To determine the number of clusters and to identify outliers, a hierarchical cluster analysis was made based on Ward's Method, using the appropriate squared Euclidean distance metric. All indicators were given the same weight. Mangystau Oblast and the cities of Astana and Almaty were excluded from the demographic analysis

as outliers while the Republic of Ingushetia and the Chechen Republic were excluded from the economic analysis for the same reason. The standardization was adjusted accordingly. Following the visual inspection (dendrogram) and evaluation of the results with regard to their interpretability, the number of clusters was set at five for the demographic analysis and four for the economic analysis. Finally, the cluster centres found with Ward's Method were used as starting points for a k-medians algorithm to refine the results and to determine the ultimate clusters. The results of Kruskal-Wallis tests for all indicators confirm that the clusters significantly differ from one another.

The final clusters provide orientation in classifying demographic and economic developments in the post-Soviet space and relating them to one another. They are by no means definitive, however: other indicators, as well as methodological deviations, could have resulted in a slightly divergent outcome. A few regions are located at the "edge" of a particular group and, under other circumstances, could have been assigned to a different group. These borderline cases, however, do not distort the overall picture. Considering the restrictions mentioned above, the selected model is as precise as possible while also ensuring interpretability of the results.

### The information tables

At the beginning of each regional chapter, there are information tables with basic demographic indicators. The data come from two sources: for the chapters on Russia, we used data from Rosstat; for all other chapters, we used information from the United Nations. Since the latter only provide most of the information as five-year-averages, the information on population density, life expectancy and net migration are based on the period from 2005 to 2010, thereby deviating from national data, which are frequently cited in the texts. Furthermore, in contrast to the chapters on Russia, the median age rather than the mean age was used for reasons of data availability.



Indicator	Unit of Measurement	Mean	Maximum	Minimum	
<b>Demography</b>					
<b>No. of children</b>	Total fertility rate (TFR), 2009	1.68 children	3.71 children (South Kazakhstan Oblast, Kazakhstan)	1.19 children (Leningrad Oblast, Russia)	
<b>Life expectancy</b>	Average life expectancy at birth in years, 2009	68.6 years	78.3 years (Republic of Ingushetia, Russia)	58.2 years (Chukotka Autonomous Okrug, Russia)	
<b>Migration</b>	Net migration (immigration minus emigration) per 1,000 inhabitants; mean for the years 2006 to 2009	– 0.14 people	+ 40.35 people (City of Astana, Kazakhstan)	– 15.37 people (Chukotka Autonomous Okrug, Russia)	
<b>Ageing</b>	Proportion of over 59-year-olds in the total population in percentages, 2009	16.3 percent	24.9 percent (Chernihiv Oblast, Ukraine)	5.1 percent (Tajikistan)	
<b>Economy</b>					
<b>GDP</b>	GDP per capita in purchasing power parities in international dollars, 2008	10,290 international dollars	46,628 international dollars (Tyumen Oblast, Russia)	1,793 international dollars (Tajikistan)	
<b>Employment</b>	Share of employed persons (all ages) in the total population aged 15 to 59 in percentages, 2008	69.5 percent	101.3 percent (Chukotka Autonomous Okrug, Russia)	20.2 percent (Republic of Ingushetia, Russia)	
<b>Research and development</b>	Public and private expenditures on research and development in percentages of GDP, 2008	0.58 percent	3.42 percent (Nizhny Novgorod Oblast, Russia)	0.01 percent (Qyzylorda Oblast, Kazakhstan)	

	Special Information	Source
	Mangystau Oblast and the cities of Astana and Almaty have been excluded from the analysis as outliers	
	Data for Belarus and Ukraine from 2008	
	Data for the North Caucasus – for example for the Republic of Ingushetia – are only partly credible: the slightly higher life expectancy is accurate, the difference between it and Russia's is doubtful; data for Ukraine from 2008	Russia, Belarus, Ukraine, Kazakhstan: National statistical committees; other countries: United Nations, World Population Prospects: The 2008 Revision Population Database
		Russia, Belarus, Ukraine, Kazakhstan: National statistical committees; other countries: United Nations, World Population Prospects: The 2008 Revision Population Database
		Russia, Belarus, Ukraine, Kazakhstan: National Offices of Statistics; other countries: United Nations, World Population Prospects: The 2008 Revision Population Database
	Analysis excluding Uzbekistan and Turkmenistan, since data were not entirely available; Belarus considered on national level for reasons of data availability; Chechnya and Ingushetia excluded as outliers	
	Regional price level differences in Ukraine and Kazakhstan not considered for reasons of data availability; wealthier regions in these countries appear slightly better-off than they might have otherwise – accordingly, poorer appear worse-off; for Russia gross regional product (GRP) was used. Since it does not take into account added value on the supra-regional level, such as federal defence expenditures, the sum of all GRPs is about twelve percent lower than national GDP. The difference was equally added to all GRPs.	Russia, Ukraine, Kazakhstan: National statistical committees; other countries: International Monetary Fund, World Economic Outlook Database
		Russia, Ukraine, Kazakhstan: National statistical committees; other countries: International Labour Organization
	Data for Ukraine were only available as current expenditures for research and development, which exclude capital investments. As a rule, these differ from total expenditures only minimally, meaning there should be no large distortions; values for Armenia, Azerbaijan, Belarus, Estonia, Kyrgyzstan, Latvia, Lithuania, Moldova and Tajikistan are based on 2007, data for Georgia on 2005	Russia, Ukraine, Kazakhstan: National statistical committees; other countries: World Bank, World Development Indicators Database

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This project was supported by

**Robert Bosch Stiftung**

as well as



**ERSTE Stiftung**

and

**Deutsche Bank AG**

ISBN: 978-3-9812473-7-4

+++ decline in births following the collapse of the Soviet Union +++ North Caucasus: region in crisis +++ rural regions suffering from out-migration +++ demographic crisis in the Far East +++ problematic integration +++ male life expectancy in Russia is lower than in Bangladesh +++ too few education